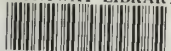
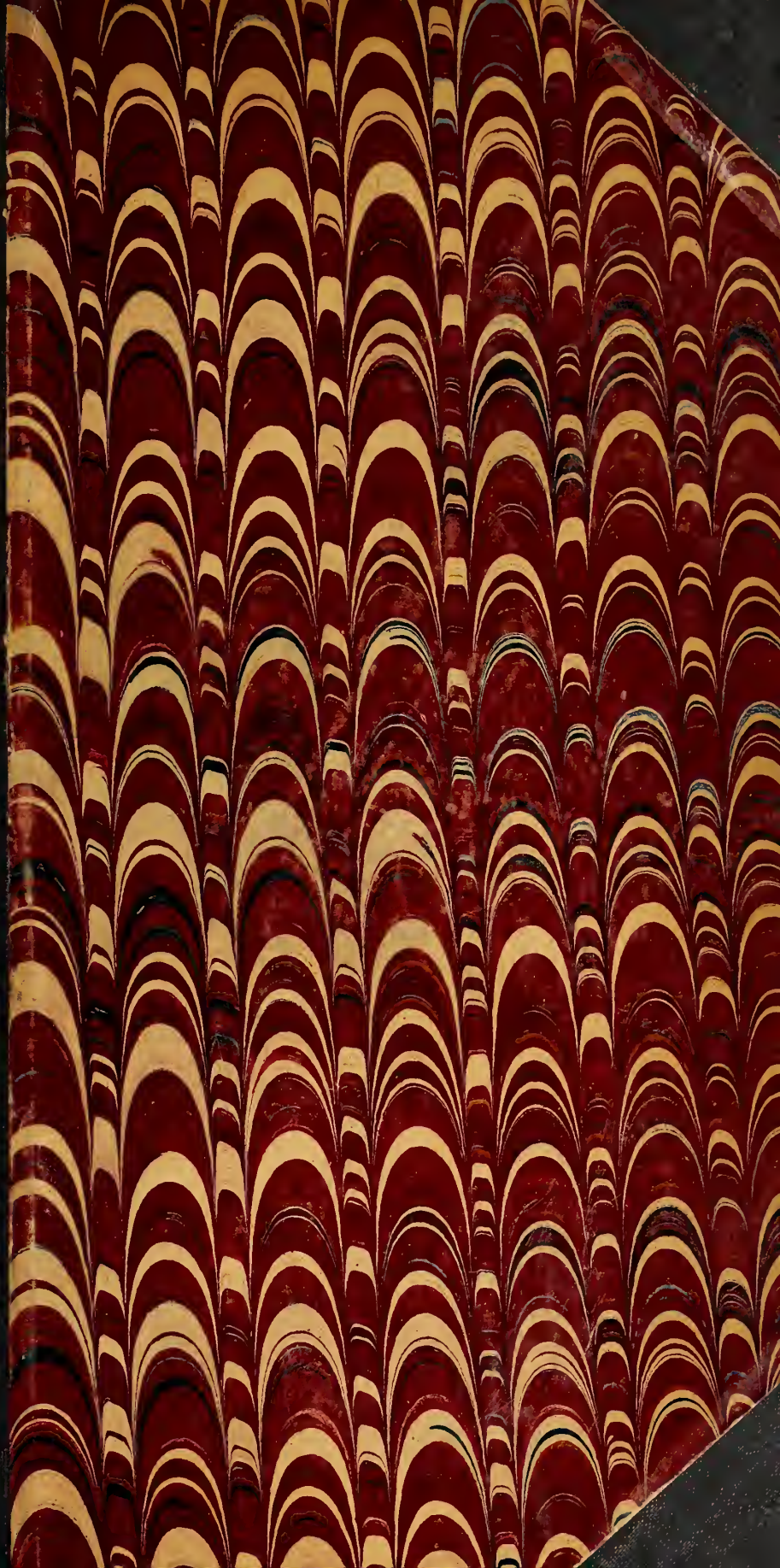


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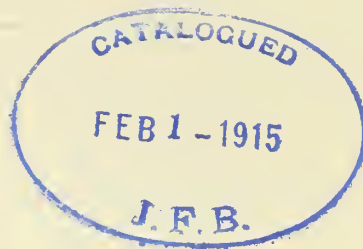
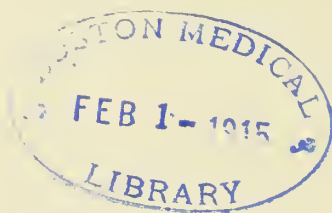
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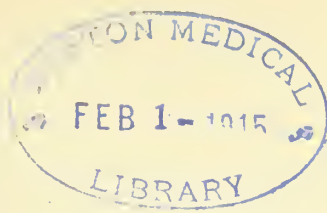
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ORIGINAL ARTICLES

THE PHYSICIAN CONSIDERED AS AN ECONOMIC FACTOR*

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CHAMPAIGN, ILL.

A review of the annual addresses given before this society will show that almost every possible phase of medical progress and medical science has been considered. Some of those addresses when reread in light of present conditions are remarkable forecasts of the growth and development of medical knowledge. The steps of progress have been outlined with a precision that is little short of marvelous by some of the master minds that have guided the destinies and outlined policies of this society.

These annual addresses as they appear in the transactions of this society might well be taken as a history of medicine for the sixty-two years of its existence. It would seem futile to attempt to review the past or portray the future in the light of what has already been said. But while the development of science, and the great problems of medicine have been abundantly discussed little has been said of the medical man, the individual who speaks the final word in this transition period that we call life.

From various other sources we hear it often reiterated that the physician is short lived, that his professional career is brief compared with other occupations of parallel requirements.

This seems strange when we consider that in the outset the natural requirements of a physician's life necessarily exclude all those who are physically unfit. A class of medical students might almost be accepted for military duty without examination. Such a body of men would be expected to last in their life work at least up to the average, since they are so universally healthy and physically correct, but statistics show that even soldiers engaged in a profession of unusual hazard have a lower death-rate than medical men. And observation shows that women in the

* President's Address delivered at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May 21, 1912.

profession are not less affected than men, that while physically less exposed the nervous system suffers more. Then why do they fall from the ranks of professional activity in the height of their usefulness or retire from disability at an age when the coordinate professions are in ripe enjoyment of an active career? The researches of Dr. Caspar, a German statistician, show that of 100 people who attain the age of 70 there will be of clergymen forty-two, of agriculturists forty, of merchants thirty-five, of soldiers thirty-two, of lawyers twenty-nine, of actors twenty-eight, of teachers twenty-seven, of physicians twenty-four.

According to the statistics collected by *The Journal A. M. A.* we find that the average age limit of the medical man is 59 years and the average number of years of practice is thirty-one. We are not surprised when we consider the conditions under which physicians work and live, to note that one-third die of heart and nervous diseases, with nervous diseases predominating. A furore of dissent went up from the civilized world when Dr. Osler marked sixty years as the extent of man's active existence, but we find that physicians at least come well within the limit. By reference to the United States census report of 1890 under occupational diseases we find the death-rate for physicians was twenty-one per 1,000. Also that from ages 25 to 65 the death-rate was higher than any other professional class, while the rate after 65 was much higher than any professional class rate at this age, and the report goes on to say: "It will be seen that the death-rate of physicians and surgeons from nervous diseases was excessively high, being much greater than the average from these causes in any other professional class." The mortality from heart diseases comes next and is almost as high. We are glad to note, however, that physicians are peculiarly exempt from tuberculosis, no doubt owing to their out of door life, their death-rate from this cause being lower than any professional class. While the troubles of the doctors and the nervous tension under which they live might well lead to suicide, the report shows that they are much below the average of professional classes when it comes to self-destruction.

The report of 1900 is remarkably similar to the preceding report. The death-rate is again nineteen per thousand while in other professional classes it was fifteen per thousand and runs progressively higher in each group as the subjects advanced in years. The highest death-rate is again accorded to nervous diseases with heart diseases a close second.

The twelfth census shows the death-rate to be twenty per thousand and again notes the rate as higher than any other professional class. Nervous disease again stands highest as a cause of death while the statistics of heart disease and tuberculosis remain the same. Thus for thirty years the United States census reports tell the same story, of high death-rate, higher than any correlative profession, and from causes that are an index of the high tension under which physicians work and live.

During the last few years writers on economic subjects have had much to say of the waste of energy from unphysiologic hours and methods of work. This applies with unusual force to physicians and is unquestionably an important factor in developing the conditions above referred to,

for the doctor is the living embodiment of unsettled habits and there seems to be no means of correcting this unfortunate condition.

Teachers of economics have long pointed out the loss in efficiency resulting from working under unfavorable conditions. This applies with striking force to the practitioner of medicine. In addition to the continued tension alluded to above is the broken rest, the loss of sleep, the necessity of undertaking some serious emergency or difficult operation at unusual hours, of rising from sleep unexpectedly, and perhaps thoroughly exhausted, to undertake some measure on which depends a human life.

Text-books on economics define it in broad sense as a study of the "means of making a living," but it needs investigation in its medical relations when the expectancy of the physician is at least ten years below its proper limit if the individuals and the character of the work are considered.

Even if the services of the physician be divested of all those sentimental features which the character of such services imply, and they are to be regarded simply as a utility for which a certain price is demanded and paid, the same laws that apply to other utilities would suggest their preservation. In a case where so much depends on training, adaptability and experience of the individual it would seem highly necessary to conserve his resources as much as possible and the patrons (who are usually the friends) of the medical man will admit that this should be done. That the laity should use every effort they consistently can to preserve the health and talents of their medical advisers does not seem to be asking too much.

One of the worst influences no doubt is the feeling of the active physician that he is always on duty, that he has no relief from responsibility. Does he attempt a quiet rest, the details of some serious case intrude on his quiet. Does he attempt the latest novel or magazine the telephone interrupts his leisure. Does he retire at night feeling the need of refreshing sleep, there hangs on his subconscious sense an unconscious and unintentional tension that will not allow complete relaxation. Nor is this all. In almost all his duties is the element of haste; unlike any other man he cannot take his time. Every call is imperative and response must be immediate; he works constantly in an atmosphere of hurry, hurry to the bedside, hurry to the emergency, hurry to the hospital, hurry to the office, hurry to meals, hurry to the end. Some of our most accomplished psychologists have dwelt at length on the deleterious effect of hurrying. Prof. William James, speaking of this as applied to our people generally—but it applies aptly to physicians—says: "I suspect that neither the nature nor amount of our work is accountable for the frequency and severity of our breakdowns, but that the cause lies rather in those absurd feelings of hurry and having no time, in that breathlessness and tension, that solicitude of results, that lack of inner harmony and ease by which, with us, work is apt to be accompanied."

The deleterious effects of constant tension is presented with striking effect by Professor Scott, an economist of Northwestern University. In an article entitled the "Waste of Hustling," he points out that hustling always sooner or later leads to inefficiency or lack of accomplishment.

He also says of the waste of human energy and its accompanying lack of accomplishment: "Note the inherent necessity for relaxation in the human organism. Even those life processes which seem to be constant in their activity require frequent periods of complete rest. The heart beats regularly and at short intervals; but after each beat its muscle comes into a state of complete relaxation and enjoys a refreshing rest even though it be but for a moment; likewise the lungs seem to be unceasing in their activity, but careful study discloses the fact that every contraction is followed by a perfect relaxation and that the rest secured between successive respirations is adequate for recuperation. No physical activity is at all continuous. Mental processes too can be continued but for a very short time."

By attempting to eliminate these periods of rest we merely exhaust without a corresponding increase of efficiency. What shall we do in this situation? Very few of us but would like to have his lease of life extended a decade if it could be done, and it certainly looks as if it ought to be possible. Are we in duty bound to turn every energy and every function of mind and body to the interests of our patients? That they should occupy a large space in our daily thoughts is certainly proper, but Dr. Luther Gulick in his "Efficient Life" says: "Life is not only for work; it is for one's self and one's friends. It includes also the amount of satisfaction to be gotten out of living." The autobiographies of some noted characters would seem to indicate that their principal object in life was to put through as much work as possible, but it is doubtful if in the final analysis they can be classed as successful, as they developed so little real satisfaction to the individual. Most pernicious is the method some men employ of turning night into day. Of doing business at night that might equally as well have been done in the day time. Of keeping up work in the office for unusual hours, and robbing the body of the hours demanded for sleep, to make up the delays occasioned thereby. Not for the physician is the injunction to "spring lightly from his couch on awaking" and meet the duties of the day with a quick step and bounding vigor; if he does he will soon find himself a bankrupt in point of energy. Let him rather lie quietly on his couch or turn a few times in bed before he attempts to arise; let the mental processes and physical energies begin gradually. Do not begin the day by setting the nerves to tingling; then will he be better able to maintain the pace when the actual duties of the day begin.

Physicians should insist that patrons consider the health and welfare of their medical adviser, giving him when possible an opportunity to make their calls without disturbing his rest or the arrangement of the day's work. It is believed also that it would be a most excellent arrangement for every physician to have in his consultation room a couch or hammock on which he might for a few minutes at a time during the course of a busy day stretch himself at full length and completely relax. No continuous mental effort should be required to last over two hours. At the end of that time a physician should give himself at least twenty minutes of complete relaxation. It would add efficiency to his work and years

to his lifetime. Followed systematically, physicians would receive great benefit if relaxation of this kind were indulged in. Let us then not hurry and not worry. The best results seem to be obtained by those who work evenly and smoothly with no attempt at haste. Let us cultivate at least, if possible, an attitude of repose. We might borrow a suggestion from the sermon on the mount. This subject first began to be agitated there. "Take therefore no thought for the morrow," keeping in mind that no matter how successful our lives appear from a financial or professional point of view, that they are failures if they do not give satisfaction to the individual. "And if we but wait, the years will come to us, and carry us with them to our long rest. There will be others where we are now, the world will move, men will live and labor and love; a philosophy which if it does not make us rich or powerful or great, will at least make us content."

DEMONSTRATION OF LUETIC REACTIONS *

HIDEYO NOGUCHI, M.D.

NEW YORK

According to history, syphilis was not known, or, at least, was not recognized in Europe, until toward the end of the fifteenth century. It is considered probable that it was first introduced to Europe from America by the sailors of Columbus. The epidemic form with which this disease ravaged Europe in these early days has suggested that it is caused by a transmissible virus. No definite search, however, for such an infectious agent was possible until the discovery of the microscope. The first one to describe an organism in syphilitic lesions was Donn , who, in 1837, found a spiral organism which apparently belonged to *Vibrio lincola*, M ller. As no sharp differentiation between the non-syphilitic and syphilitic lesions had been yet established at that time, the finding of a spiral organism was inadequate to prove that it had any etiologic relation to syphilis. Bassereau, in 1852, rendered a great service by separating definitely the venereal sore from the true chancre, thus giving the basis for accurate investigations.

Research in syphilis became henceforth increasingly active, and the discoveries of the causative organism were announced year after year from different quarters, only to be disproved after a shorter or longer period of refutation and controversy among the investigators at the time. Hallies, in 1869, found in the syphilitic blood his *Coniothecium syphiliticum* and held it as the cause. L storfers, in 1872, announced his discovery of minute sparkling granules in the syphilitic blood which was kept for a few days in a moist chamber, but his finding was discredited by Neumann, Biesiadecki, Vajda and others. Then came, in 1878-79, Klebs' discovery in chancre juice of numerous actively mobile granules and rods which he called *Helicomonades*. In 1882, Birch-Hirschfeld stained in the tissues from gumma, papules and chancres, minute bacteria which others con-

* Read before the Chicago Medical Society (by invitation), March 13, 1912.

sidered as mast-cell granules, while Martineau and Hamonic reported in the same year their alleged success in reproducing the syphilitic lesions in pigs and monkeys with their bouillon cultures of cocci and bacteria. In 1884, the well-known discovery of Lustgarten was heralded from Weigert's laboratory. He demonstrated the presence of a bacillus in certain syphilitic products which resembled the tubercle bacillus discovered by Koch in 1882. The finding was confirmed by a number of reputable bacteriologists, among whom were Doutrepoint, Schütze, Giletti, de Giacomi, Gottstein, Babes and Baungarten. It soon met with severe criticism, however, by Alvarez, Tavel, Klemperer, Matterstock, Bitter and many others, who not only failed to find this bacillus in the sections of the syphilitic tissues, but found it in other diseases as well as in normal smegma. Thus the discovery of Lustgarten gradually passed from general interest. In spite of Lustgarten's mistake, a great many investigators went further on to find the real organism of syphilis. Most of them described the cocci-like granules in the blood or lesions of syphilitics and claimed to have obtained pure cultures of so-called syphilis bacillus or syphilis coccus from the blood or glands. Van Niessen still asserts that a polymorphous bacillus which he obtained from the syphilitic blood and named *syphilyomyces* is the cause of syphilis. He maintains that *Spirochæta pallida* is only one of the life cycles of this bacillus, although Hoffmann points out that there is absolutely no resemblance between the *pallida* and Van Niessen's bacillus in any stage of development. Similar bacilli were reported to be present in the syphilitic blood, by de Lisle and Jullien, Paulsen, Joseph and Piorkowski, but they are now considered to be due to external contamination. There are also certain investigators who claim to have found protozoa in syphilitic products, but their findings were soon disproved as mostly due to the artefact or decomposition products.

THE DISCOVERY OF SPIROCHÆTA PALLIDA

The new era in the experimental research in syphilis began with the successful transmission of syphilitic lesions to higher apes by Metchnikoff and Roux in 1903. This opened up the field by furnishing a means of studying the nature of the caustive agent of syphilis outside of human subjects. Thus Klingmüller and Baermann determined that the virus of syphilis does not pass through filters and does not, therefore, belong to an ultramicroscopic organism. The finding was confirmed by Metchnikoff. These two findings, the transmissibility to certain animals, and non-filterability through porcelain bougies of the syphilitic virus, have exerted a great influence in enticing competent microscopists and biologists to attempt anew a thorough search for the virus, for they have learned that the organism lies within the limit of visibility.

It was not, however, until 1905 that an organism which was destined to gain universal recognition as the long-sought virus of syphilis, was viewed for the first time by Fritz Schaudinn in a joint investigation with Erich Hoffmann. Schaudinn found in the aspirated juice from the swollen inguinal glands of a syphilitic a faintly visible, extremely delicate small spirochete in fresh preparations. The organism was stained faintly

TABLE 1.—POINTS OF DIFFERENTIATION OF SPIROCHETES

Varieties of Spirochetes	Requirement for Tissue	Production of Putrefaction Odor	Appearance of Growth	Pathogenicity	Dimension (Av.)	Curves (Average)	Movements	Complement Fixation with the Pallida Immune Serum	Allergic Reaction on Syphilitic Patients
<i>Spirochaeta</i> * <i>pallida</i>	+	—	Diffuse, faint.	+	6.2-0.3 μ x 6-18 μ	Regular, deep. 4-16	Rotation....	+	+
<i>Spirochaeta</i> * <i>microdentium</i>	—	+	Denser, more discrete.	—	0.2-0.25 μ x 5-18 μ	Regular, fairly deep. 4-20	Rotation....	—	—
<i>Spirochaeta</i> * <i>macrodentium</i>	+	—	Diffuse, faint.	—	0.25-0.4 μ x 6-18 μ	Less regular. 3-14	Vibratory and rotation.	—	—
<i>Spirochaeta</i> * <i>refringens</i>	—	—	Fairly well defined, faint.	—	0.5-0.75 μ x 6-20 μ	Irregular. 3-8	Wavy and serpentine.	—	—

* They all belong to genus *Treponema*.

with Giemsa's solution, paler than any spirochete known to him at that time; hence he gave it the name of *Spirochæta pallida*, renaming it *Treponema pallidum* in the same year. Schaudinn and Hoffmann examined a series of syphilitic and non-syphilitic patients and found that the *pallida* was almost always present in syphilitic lesions, but never in other diseases. They have described at the same time another, quite larger, irregularly and less curved spirochete which was found in non-syphilitic as well as syphilitic lesions on genitals. The name of *Spirochæta refringens* was given to this form. The discovery was soon confirmed with amazing rapidity by different investigators who demonstrated the *pallida* in various lesions, blood-vessels, internal organs, blood, spermatozoa, ova, and other body-fluids of syphilitic patients. Through the investigations of Buschke, Fischer, Levaditi, Salmon, Hoffmann, Paseten, Bertarelli, Volpino, Babes, Panea, Flexner and many others, the *pallida* was demonstrated in abundant number in different organs and tissues of syphilitic children and fetuses. The organism was also found by Metchnikoff and Roux in the lesions in monkeys produced directly with human virus or indirectly through transmission of the virus from animal to animal. Soon afterward Truffi, Bertarelli, E. Hoffmann, Uhlenhuth, Mulzer, Nichols and others have succeeded in infecting rabbits, guinea-pigs and lower monkeys, and have constantly found the *pallida* in the lesions. The transmissions of the *pallida* from man to monkey, monkey to rabbit, and rabbit to monkey, for many generations, has been carried on by Hoffmann. The testicles of rabbits were especially suitable for purifying the *pallida* from the associating organisms, as the latter disappear completely after passing one generation, through the rabbit's testicle. Uhlenhuth and Mulzer were able to produce generalized syphilis in young rabbits by the intracardial inoculation with testicular strains of the *pallida*.

Thus *Spirochæta pallida*, Schaudinn, fulfilled almost all the requirements laid down by Koch before being accepted as the causative agent of syphilis. The only missing link was that a pure culture of this organism should be able to produce the pathologic changes in experimental animals similar to those found in human syphilis.

CULTIVATION OF SPIROCHÆTA PALLIDA

1. *Mixed Cultures.* — Many investigators failed to obtain any growth of the *pallida* outside of the animal body. In 1907, Levaditi, Yamanouchi and others, found that the *pallida* remain motile in a colloidal sac filled with monkey serum and kept for many weeks in the peritoneal cavity of a monkey. The impure cultures thus obtained were non-virulent for any animal. In 1909 Schereschewsky reported that an impure culture of *pallida* may be obtained by inserting a piece of chancre into a high-layer tube of gelatinized horse serum. The success was not uniform, and he says that when the original material contained a virulent strain for rabbits or monkeys no growth in his horse serum was observed. Inversely, an impure growth may take place when the material used was non-virulent. All his cultures were non-pathogenic for monkeys and rabbits. It is difficult to decide whether his impure cultures

contained an avirulent *pallida* or a certain spirochete indistinguishable from the *pallida*, because in a culture morphology alone is no criterion for identifying the *pallida*. In 1910 Bruckner and Galascesco reported a successful production of syphilitic orchitis in rabbits by means of an impure culture in gelatinized ascitic fluid in which the original syphilitic tissue was still present. Sowade, in 1911, reported a successful generalization of syphilis in a rabbit through the intracardiac inoculation of an impure culture in gelatinized horse serum. In this case the rabbit showed scattered lesions over the body in which the *pallida* were found.

2. *Pure Cultures*.—There are up to the present date three investigators who claim to have succeeded in cultivating *Spirochæta pallida* in pure state, Mühlens, W. H. Hoffmann and myself. Mühlens published his first article in 1909 and the second in 1910, asserting that he obtained one strain of the *pallida* in pure culture. W. H. Hoffmann, who has assisted Mühlens, continued to work alone a little longer and reported, in 1911, that he was able to isolate five more strains of the same organism as Mühlens. The method of cultivation consisted of the use of Schereschewsky's horse serum for obtaining an impure culture and then purifying it in a horse serum agar (deep layer). The claim of Mühlens that his spirochete was a *pallida* was based entirely on the similarity of the morphology between the cultivated organism and the *pallida*, because no pathogenicity whatever was possessed by his culture. In his first report, W. H. Hoffmann mentions, also, that none of the strains of the organism cultivated by him was pathogenic. Later, in a brief report, this investigator claims to have produced an orchitis in rabbit by means of one of his cultures. He ascribes his earlier failure to accomplish this to the use of an insufficient quantity of culture. The pathologic changes produced by his culture as described by him were by no means convincing as a syphilitic nature. He succeeded in cultivating back his spirochete which, like all the other cultures of these two workers, developed a penetrating putrefactive odor. In regard to the differentiation of the organism isolated by them, both authors make very little mention, saying that the general characteristics of the culture are indistinguishable from those of *Spirochæta dentium* cultivated by Mühlens in 1906. Like the *dentium*, the spirochete of Mühlens and W. H. Hoffmann grows in a horse-serum agar without the addition of any fresh tissue, and produces a strong putrefactive odor. The differences which their spirochete presents in contrast to the *pallida* isolated by me, as will be presently described, are striking. Furthermore, as will be seen later on, there is absolutely no difference between *Treponema microdentium* isolated by me and the so-called *pallida* of these two authors.

Since 1910 I have been working on the cultivation of *Spirochæta pallida* and have succeeded in isolating six different strains from the orchitis material of rabbits and seven directly from chancres, condylomata and skin papules of human subjects. The methods used are different, according to whether the *pallida* is to be cultivated from the orchitis

of rabbits or directly from man. For the former, which contains the *pallida* in almost pure state, a fluid medium is preferred. A serum-water containing a piece of sterile fresh tissue is inoculated with the emulsion of the spirochete and cultivated under most strictly anaerobic conditions. After the first generation of the growth is obtained, it is more and more acclimated to the artificial cultural conditions by passing repeated subcultures in the fluid media. Then the *pallida* is transferred to a solid medium containing the suitable nutriment and fresh tissues. If the culture is impure, it can be purified in solid media by a special technique.

On the other hand, a fluid medium is unsuitable for obtaining a growth of the spirochete when the human material is utilized, because the medium undergoes, through the growth of the accompanying bacteria, such changes that it renders the medium unfit for the growth of *pallida*. For this reason, I have resorted to the use of a solid medium consisting of one part of ascitic fluid and two parts of weakly alkaline agar with a piece of sterile fresh tissue at the bottom. The percentage of success depends on the suitability of the medium which can vary considerably with different specimens of ascitic fluids used, and also on the adaptability on the part of the strains of the *pallida*. The method of purification and other minor technical points will be found in my previous papers.

The six orchitis strains and seven human strains of the *pallida* thus obtained are identical in morphologic and cultural characteristics. They grow slowly and steadily around the tissues and form very faint diffuse undefined colonies extending gradually. The spirochete is strictly anaerobic and requires the presence of a fresh sterile tissue for development. It does not attack the protein constituents of the tissue or serum, nor does it produce an odor in growth in any medium. The cultivated *pallida* is less actively motile, but the variety of the movements is characteristic. Under unfavorable cultural conditions its morphology becomes less typical. The growth continues for several weeks. It has been noticed that the *pallida* strains isolated from the rabbit's orchitis grow more luxuriantly in a medium containing rabbit serum, while those from human chancres prefer the ascitic fluid agar. It appears as if the passage of the *pallida* through the rabbit's body modified the biologic property of this organism.

In regard to the pathogenicity, I have succeeded in producing typical orchitis in several rabbits by means of pure cultures of the orchitis strains. With the human strains I was able to produce the initial lesions on the skin of *Macacus rhesus* and *Cercopithecus callitrichus*. The Wassermann reaction developed in these monkeys after the appearance of the induration, several weeks after the inoculation.

The above identification of my cultivated *pallida* strains seems to amply justify my assertion, but I am now in the position to offer further evidences of its identity by means of the immunity and allergic reactions. For a fuller discussion, I will return to this topic later, but a brief statement is made here.

TABLE 2.—LUETIN REACTION IN VARIOUS SYPHILITIC CONDITIONS AND IN CONTROLS

	Primary Syphilis		Secondary Syphilis		Tertiary Syphilis		Congenital Syphilis		Cerebro-spinal Syphilis		Latent Syphilis		Controls	
	Symptoms Present	Symptoms Absent	Symptoms Present	Symptoms Absent	Symptoms Present	Symptoms Absent	Under 1 Year	Late Cases	Symptoms Present	Symptoms Absent	+	-	Normal Individuals	Non-Syphilitic Cases
Luetic reaction	+	-	+	+	+	+	+	+	+	-	+	-	+	-
No antisyphilitic treatment.	..	13	..	..	..	..	..	..	..	..	24	6	50	200
Slight mercurial treatment.	1	12	2	25	12	..	5	18	..	..	..	..	..	..
Regular mercurial treatment.	..	..	..	14	31	29	1	3	15	5	..	..	..	..
Salvarsan and mercurial treatment.	..	..	1	42	..	22	3	9	..	..	..	..	..	..
	1	25	3	25	43	0	6	21	24	5	24	6	0	200
	26		69		98		52		10		30		250	

Several series of experiments¹ on rabbits were conducted with the purpose of producing the specific antibodies for the cultivated *pallida* and the tissue *pallida* (rabbit's orchitis). After a prolonged immunization, the serums of these rabbits were tested for the antibodies by means of a specific complement fixation test using the spirochete extracted as antigen. It was found that the immune serums prepared with the cultivated *pallida* fix the complement with the antigen derived from the *pallida* of rabbit's orchitis as well as from the culture. The immune serums prepared with the orchitis tissue *pallida* reacted also with both antigens. On the other hand, both sets of the immune serums gave negative reactions with the antigens made of the pure cultures of mouth spirochetes or *Spirochata refringens*. The mutually interchangeable reaction between the cultivated *pallida* and the tissue *pallida* establishes completely the identity of the two. It is also found that the rabbits sensitized with the orchitis *pallida* by repeated inoculation show the allergic skin reaction to the cultivated *pallida* extract (luetin) as well as to the tissue *pallida* extract. They do not react to the extracts of the *dentium* or *refringens*. This phenomenon adds further evidence that the spirochete cultivated and claimed by me to be the *pallida* is identical with the *pallida* found in the syphilitic tissues.

DIFFERENTIATION OF SPIROCHÆTA PALLIDA AND CERTAIN MORPHOLOGICALLY AND CULTURALLY ALLIED SPECIES

The identification of a microorganism depends on a series of characteristics possessed by each organism. As the deviation of one member from the closely related members of the same family is only gradual and partial, it becomes important to discover as many individual characteristics as possible of each of them. The differentiation may thus become possible by pointing out one or more differences between the two, in spite of the presence of numerous other properties in common. It may happen that two organisms possess almost indistinguishable morphology, but grow differently, while their morphology may be quite different, yet present similar appearance in growth. Every pathologist knows that the morphologic variations can exist to a considerable extent among different strains of the same organism and offers confusion when one attempts to differentiate it from the morphologic side. Fortunately, we are now in possession of certain indirect methods of identification in such cases, and this often carries more conviction than the most of the other evidences. These indirect methods are the phenomena of immunity and anaphylaxis. While the immunity phenomena are liable to be deprived of their value of identification through occasional group reactions among allied species, yet when it occurs that there is none, it brings identification beyond any dispute. The same is true of the allergy. Another method of identification is applicable only when the organism is pathogenic for certain animals. By the nature of pathogenicity, an organism can be differentiated from the others. But, there is also a difficulty in utilizing this procedure for a definite differentiation,

1. Partly aided by Dr. J. Bronfenbrenner.

as certain strains of the same pathogenic organism may become attenuated or even avirulent during the cultivation. Hence the absence of pathogenicity in this instance constitutes no evidence that the organism is another species.

For the identification of the *pallida* cultivated by me, the above were taken into consideration.

It may be mentioned that I have succeeded in cultivating *Spirochæta macrodentium*, *Spirochæta microdentium* and *Spirochæta refringens* in pure state and employed them for comparative studies with *Spirochæta pallida*.

Spirochæta pallida is indistinguishable from *Spirochæta microdentium* by the morphologic characteristics, but is well differentiated from the latter by the requirement of tissue for growth, the absence of a putrefactive odor, the pathogenic property, the positive complement fixation with the antiserum produced in animals by immunizing them with pure *pallida* extract (such as the syphilitic orchitis of rabbit), and its capability of inciting an allergic reaction in syphilitic patients. The *macrodentium* and *refringens* can be easily differentiated from the *pallida* by their morphology alone, although they behave quite differently in other respects as well.

Now, turning our attention to the spirochetes cultivated and claimed by Mühlens and W. H. Hoffmann to be the *pallida*, it becomes clear that their spirochetes correspond with *Spirochæta microdentium* in every principal characteristic, and disagrees with the *pallida* obtained by me. It appears quite strange that neither Mühlens nor W. H. Hoffmann has isolated even once a spirochete identical with my strains of the *pallida*, while W. H. Hoffmann states that he obtained his variety, which doubtless belongs to the *microdentium*, from five different chaneres. Mühlens, it may be recalled, obtained this variety only once out of nearly eighty different specimens of syphilitic tissues. Whether the *microdentium* is more frequently associated in syphilitic lesions in Germany, it is difficult to say, but so far as my personal experience with numerous chancres and condylomata is concerned, I have never isolated a single strain of the *microdentium* from a syphilitic lesion outside of the oral cavity. It was for the purpose of avoiding such a confusion between the *microdentium* and the *pallida* that I had taken the trouble to use the rabbit's orchitis for cultivation in my first series of work, and later when cultivating the *pallida* directly from human syphilitic tissues, I never utilized the lesions in the mouth.

In identifying a cultivated spirochete with *Spirochæta pallida* the following points must be fulfilled:

1. The spirochete must be morphologically correct.
2. It must not produce a putrefactive odor.
3. It must not grow without the addition of fresh tissue.
4. It must bind complement with the immune serum (rabbit is preferred) produced by means of repeated injections of the tissue *pallida* (to be obtained from syphilitic orchitis).
5. It must give an allergic reaction in certain cases of syphilis.

6. It must be pathogenic. The last requirement is highly important, but one cannot exclude the possibility of the organism still being the *pallida*, even if it is avirulent, as long as it fulfills the other five points, because it is not impossible that a strain of *pallida* may become attenuated in cultivation.

MORPHOLOGIC AND PATHOGENIC VARIATIONS IN SPIROCHLETA PALLIDA

Hitherto but little attention has been paid to certain morphologic and pathogenic variations that exist among different strains of *Spirochata pallida*. It is true that such variations can hardly be brought out through the usual microscopic examinations of different specimens of syphilitic material. It requires a careful comparative study on a large number of strains either carried through the animal body for many generations, or in pure cultures. I was fortunate in obtaining ten different strains of the *pallida* in the testicles of rabbits and in studying them side by side. During my observations, extending over a period of over one year, I was struck with certain variations in the morphology and pathogenicity. Seven out of ten strains had the typical morphologic features and produced the diffuse orchitis in rabbits within three to four weeks, and progressed for about six to seven weeks. Then the orchitis usually retrogressed. Two strains were somewhat heavier than the average, and produced very hard nodules of cartilaginous consistency within eight weeks. The lesions increased in size very slowly, and remained for many weeks. The lesions on section showed much mucin and were difficult to crush. One strain, derived from a case of malignant syphilis, was somewhat thinner and attained a greater length than the average. It produced a soft diffuse swelling of the testicle within ten to fourteen days, progressing for several weeks. These characteristics were maintained unchanged for the entire period of observation.

Among the pure cultures I have observed similar variations in morphology. Of thirteen strains, eight show the typical morphologic features, two thicker and three thinner forms. The morphology of the thinner type resembles that of *Spirochata microdentium*, and it is almost impossible to differentiate under the microscope. Nevertheless, the other characteristics identify it as the *pallida*. It may be mentioned that different types of the *pallida* can be present together in one lesion, as I was able to obtain a thicker and a thinner form with the average strain.

The above seems to be a highly important distinction, and, if in the study of a still larger number of specimens of the *pallida*, it is maintained, it will throw light on certain important clinical features of the human syphilitic disease.

ALLERGY IN SYPHILIS

The peculiar change of reactivity in the system of individuals infected for some time with certain pathogenic microorganisms, as characterized by a hypersensitiveness to the incorporation of the constituents of the latter in a specific sense, has been recognized for a long time. Thus Koch's tuberculin test, von Pirquet's cutaneous test, Calmette-Wolff-Eisner's ophthalmic test in tuberculosis, the malein test in glanders, and

TABLE 3.—THE ANTIGENS USED FOR THE FIXATION TESTS

	I	II	III	IV	V	VI
	Acetone-Insoluble Tissue Lipoids (Wassermann Reaction or Lipotropic Fixation)	Pallida Emul- sion from Rab- bits Syphilitic Orchitis	Control Emul- sion from Nor- mal Rabbits' Testicles	Pallida Emul- sion from Pure Cultures	Control Emul- sion from Un- inoculated Culture Media	No Antigen
Syphilitic Cases	(Primary syphilis, untreated.....	1 unit	+	+	+	+
	Primary syphilis, untreated.....	3 units	+	+	+	+
	Primary syphilis, untreated.....	2 units	+	+	+	+
	Primary syphilis, untreated.....	1 unit	+	+	+	+
	Primary syphilis, untreated.....	5 units	+	+	+	+
	Secondary syphilis, slight treatment, general rash.....	2 units	+	+	+	+
	Secondary syphilis, slight treatment, general rash, fading.....	10 units	+	+	+	+
	Secondary syphilis, moderate treatment, manifest.....	3 units	+	+	+	+
	Secondary syphilis, moderate treatment, manifest.....	2 units	+	+	+	+
	Secondary syphilis, salvarsan, no symptoms.....	1 unit	+	+	+	+
	Secondary syphilis, salvarsan, no symptoms.....	{ 1 unit	+	+	+	+
	Secondary syphilis, salvarsan, no symptoms.....	{ 0.5 unit	+	+	+	+
	Tertiary syphilis, no recent treatment, manifest.....	4 units	+	+	+	+
	Tertiary syphilis, salvarsan and Hg, no symptoms.....	2 units	+	+	+	+
	Tertiary syphilis, salvarsan and Hg, symptoms clearing.....	1 unit	+	+	+	+
Non-Syphilitic Cases	Tertiary syphilis, Hg treatment, manifest.....	{ 0.5 unit	+	+	+	+
	Late hereditary syphilis, Hg treatment, manifest.....	2 units	+	+	+	+
	Late hereditary syphilis, Hg treatment, manifest.....	8 units	+	+	+	+
	Late hereditary syphilis, Hg treatment, manifest.....	+	+	+	+	+
	Gonorrhea.....	+	+	+	+	+
	Tuberculosis.....	+	+	+	+	+
	Chancroid.....	+	+	+	+	+
	Carcinoma.....	+	+	+	+	+
	Dementia praecox.....	+	+	+	+	+
	Leprosy (tubero- type).....	5 units	+	+	+	+
	Leprosy (mixed type).....	3 units	+	+	+	+
	Rabbit, syphilitic orchitis, six weeks' duration.....	1 unit	+	+	+	+
	Rabbit, syphilitic orchitis, six weeks' duration.....	1 unit	+	+	+	+
	Rabbit, syphilitic orchitis, six weeks' duration.....	2 units	+	+	+	+
	Rabbit, syphilitic orchitis, six weeks' duration.....	1 unit	+	+	+	+
Experimental Syph	Rabbit, syphilitic orchitis, six weeks' duration.....	1 unit	+	+	+	+
	Rabbit, normal.....	+	+	+	+	+
	Rabbit, normal.....	+	+	+	+	+
	Rabbit, normal.....	+	+	+	+	+
	Rabbit, normal.....	+	+	+	+	+

Explanation: + = positive; { + = weakly positive; ± = doubtful; — = negative reaction.

similar reactions in various chronic or acute infectious diseases, have been discovered and become useful aids in diagnosis. Recent studies on anaphylaxis with various proteids, as inaugurated by Theobald Smith and thoroughly investigated by Richet, Otto, Besredka, Rosenau, Anderson, von Pirquet, Shick, Friedberger, Kraus, Dörr, Auer, Lewis, Gay, Southard, Pfeiffer, Wells, and others, clearly established the specific nature of the phenomenon. The most interesting feature of the anaphylactic phenomenon lies in the fact that the hypersensitiveness to a foreign protein develops only when a certain period of cessation of the introduction of the substance is allowed to elapse before the next injection, which then produces the well-known symptoms. The continuation of inoculation at regular short intervals does not confer on the recipient of the foreign substance any anaphylaxis during this period. It is, therefore, more likely to develop an anaphylactic condition in those patients who are infected with certain organisms which remain in their body for a long period, during which their activity undergoes fluctuations either spontaneously, possibly partly owing to the production of certain antagonistic substances by the infected hosts, and partly owing to the nature of the infecting microorganism, or fluctuations through the usual therapeutic interference. The clinical course of syphilis indicates that the infecting agent, *Spirochæta pallida*, fulfils all the requirements that lead to the development of an anaphylactic condition in syphilitic patients. Theoretically one should not expect this condition to appear as long as the activity of the *pallida* is maintained at its maximum, as is the case with the early period of infection. But one can reasonably expect the appearance of this phenomenon when the activity of the organism is abated through the gradually acquired defensive power of the hosts, or under an effective therapeutic control. Thus we may find this condition to be present in later stages of the disease. Likewise, the cases of late hereditary syphilis would behave similarly. It will be seen later that the above theoretical points are well borne out by the practical results to be reported.

Syphilis is a chronic infectious disease, and presents many difficulties in diagnosis. During its very early period, it is principally a disease of dermatologic, genito-urinary, and laryngologic fields. There the clinical appearance, demonstration of *Spirochæta pallida* and the Wasserman reaction usually settle the diagnosis. On the other hand, as soon as it enters its chronic course, it manifests most diverse and often obscure symptoms. The direct demonstration of the *pallida* becomes laborious and often impossible, the serum reaction less frequent, and the clinical aspect less decisive. A great many cases of the disease at this period now pass into the fields of medicine, surgery, ophthalmology, neurology, and psychiatry. Here the detection of the allergic condition will doubtless aid in deciding the diagnosis of dubious cases.

Since the discovery of *Spirochæta pallida*, various investigators attempted to introduce a specific cutaneous reaction based on the allergy in syphilis. Thus, Meirosky, Wolff-Eisner, Munk, Tedeschi, Nobl, Ciuffo, Nicolas-Favre-Gauthier, Neisser-Bruck, Jadassohn and Fontana carried

out a series of experiments by means of an extract obtained from syphilitic tissues containing the *pallida*. They were much handicapped by not having a pure *pallida* extract for such purposes. One can imagine the way in which an extract containing various bacteria besides the *pallida* would react. With such an impure antigen, some of them obtained quite favorable results, while others were unable to come to any conclusive result.

After obtaining the pure cultures of several strains of the *pallida*, in 1910-11, I commenced my experimental work on rabbits with the purpose of ascertaining if these animals could not be made allergic to the extract of pure *pallida*. By repeated intravenous injections of the *pallida* antigen into the rabbits for several months and then giving them a month's rest, I tested them with the extract, which was termed "luetin," given intradermally. A proper control was provided. They all reacted to the luetin with marked inflammation, some leading to pustulation in several days. No normal rabbit reacted. While I was still working with the animals, Professor Welch suggested that I make the test on human subjects. Through his encouragement, I commenced the work at once at different dispensaries, and hospitals with the cooperation of the physicians in charge.

My series comprised several hundred cases, including syphilis, para-syphilis, non-syphilitic diseases, and normal individuals.

In the series just referred to, the luetin was made from only two strains of pure cultures of the *pallida*. Since then, I have been preparing it with at least six different strains, thus securing a polyvalent antigen. The luetin has been recently distributed to certain hospitals in this country and Europe and their results are not reported as yet. The first report on this subject published is by Cohen, who is applying the test to the ophthalmologic conditions. His results show that the reaction is specific and offers much aid in diagnosis where either the seroreaction or the clinical symptoms are indecisive. The second report is by Orleman-Robinson, who applied the reaction to dermatologic conditions at several skin clinics in New York. The results of this investigator also confirm the specificity. The reaction was positive in all tertiary and hereditary cases, and absent in the primary and untreated secondary syphilis. It was also absent in a large number of skin cases, including psoriasis, epithelioma, acne vulgaris, erythema multiforme, urticaria, alopecia areata, trichophytosis, erythema toxicum, bromid eruption, sycosis, scabies, pityriasis, rosea, tinea versicolor, eczema, ulcer cruris, Darier's disease, eczema seborrheicum, and also pulmonary tuberculosis. Both investigators did their work at their clinics under the joint observations by their colleagues.

In certain cases of tertiary and hereditary syphilis, they have observed the so-called *Umstimmung* of Neisser, in which the control injection also reacted more or less markedly. This confirms my earlier observations.

Regarding the varieties of the luetin reaction, I have made the following types:

DESCRIPTION OF THE REACTIONS

Normal or Negative Reactions.—After applying the emulsions, both luetin and control, to about fifty normal individuals, I was able to determine the variations and limitations of the reactions that follow intradermic administration in the normal skin of a man. In the majority of normal persons, there appears, after twenty-four hours, a small erythematous area at and around the point of injection. No pain or itching sensation is experienced. This reaction gradually recedes within forty-eight hours and leaves no induration. In certain individuals, the reaction may reach a stage of small papule formation after twenty-four to forty-eight hours, after which and within seventy-two hours it commences to subside. No induration is left behind, although occasionally slight yellowish pigmentation may result from mild ecchymosis.

Positive Reactions.—According to the manner and intensity with which the skin of syphilitics responds to the introduction of luetin, one may distinguish the following varieties of effects:

A. *Papular Form:* A large, raised, reddish, indurated papule, usually from 5 to 10 mm. in diameter, makes its appearance in twenty-four to forty-eight hours. The papule may be surrounded by a diffuse zone of redness and show marked telangiectasis. The dimensions and the degree of induration slowly increase during the following three or four days, after which the inflammatory processes begin to recede. The color of the papule gradually becomes dark bluish-red. The induration disappears within one week, except in certain instances in which a trace of the reaction may persist for a longer period. This latter effect is usually met among patients with secondary syphilis under regular mercurial treatment in whom there are no manifest lesions at the time of making the skin test. Cases of congenital syphilis also show this reaction in early period of life.

B. *Pustular Form:* The beginning and course of this reaction resemble the papular form until about the fourth day, when the inflammatory processes commence to progress. The surface of the indurated, round papule becomes mildly edematous, and multiple miliary vesicles occasionally form. At the same time, a beginning central softening of the papule can be seen. Within the next twenty-four hours, the papule changes into a vesicle filled at first with a semi-opaque serum that later becomes definitely purulent. Soon after this, the pustule ruptures spontaneously or after slight friction or pressure. The margin of the broken pustule remains indurated, while the defect caused by the escape of the pustular content becomes quickly covered by a crust that falls off within a few days. About this time the induration usually disappears, leaving almost no scar after healing. There is a wide range of variation in the degree of intensity of the reaction described in different cases, as some show rather small pustules, while in others the pustule is much larger. This reaction was found almost constantly in patients with tertiary or late hereditary syphilis.

C. *Torpid Form:* In rare instances, the injection-sites fade away to almost invisible points within three or four days, so that they may be

passed over as negative reactions. But sometimes these spots suddenly light up again after ten days, or even longer, and progress to small pustular formation. The course of this pustule is similar to that described for the preceding form.

This form of reaction has been observed in a case of primary syphilis, in one of hereditary syphilis, and in two cases of secondary syphilis, all being under mercurial treatment.

Neither in syphilitics nor in parasymphilitics did a marked constitutional effect follow the intradermic inoculation of the luetin. In most positive cases, a slight rise in temperature took place lasting for one day. In three tertiary cases and in one hereditary case, however, general malaise, loss of appetite and diarrhea were noted.

The final estimation of the luetin test awaits future investigations by a large number of observers. In the meanwhile, I consider it fairly accurate to state that in this reaction one has a specific test for syphilis. Its more constant presence in the late stage of syphilis than the serum reaction may be of special advantage to those who have to deal with this class of cases.

From my limited observations, it appears that the allergic condition of skin in syphilitic patients persists as long as the infecting agent still survives somewhere in the body, and it requires a most energetic treatment to remove it. Should the destruction of the *pallida* be complete, the allergy must also cease to exist beyond a certain length of time. In animal experiments the luetin reaction no longer appeared after a period of several months. In several instances of human syphilis, in which the symptoms and serum reaction had disappeared under the treatment with salvarsan, the subjects failed to respond to luetin reaction after from eight to twelve months, and the patients still remain in excellent health. It will be of great importance if the luetin reaction can be employed for determining a cure. I have, however, seen cases in which the disease persists in spite of the treatment, and the patients do not give a positive luetin reaction. This class of cases shows undoubtedly an unfavorable prognosis.

SPIROCHÆTA PALLIDA AND THE WASSERMANN REACTION

Although the discovery of the Wassermann reaction was due to the assumption that a syphilitic serum containing the specific antibodies fixes the complement when mixed with an extract containing *Spirochæta pallida*, the real cause of this interesting phenomenon is now generally known not to be of the nature of a specific complement fixation brought about through the combination of the syphilitic antigen (*Spirochæta pallida*) and antibodies, in the strict sense of the term. The discovery of Landsteiner, Müller and Pötzl and Porges and Meier, that an alcoholic extract of syphilitic as well as normal tissues yields practically the same results as an aqueous extract of a syphilitic organ, originally recommended by Wassermann and Bruck, and the fact that the Wassermann reaction occurs also in non-syphilitic diseases (leprosy, frambesia, malaria, etc.) as observed and confirmed by later investigators, made

the original antigen-antibody view untenable. Further, the extensive series of experiments of Noguchi, later with Bronfenbrenner, conclusively proved that the active principles of the so-called antigens in the Wassermann reaction are present in the lipoidal substances of the tissues, irrespective of whether they are derived from syphilitic or non-syphilitic human subjects or animals.

In spite of these facts, certain investigators still adhere to the original view without, however, any definite evidence in favor of such an assumption. Since the causative organism, *Spirochata pallida*, has now been cultivated in pure state and identified through its pathogenicity and other biologic properties, such as the capability of inciting the Wassermann reaction in experimental animals, it is now possible to find out by exact experiments to what extent *Spirochata pallida* plays the rôle of the so-called antigen in the Wassermann reaction.

In order to settle the above question, several series of experiments were carried out on repeated occasions in regard to the following points:

1. Can syphilitic serums giving the positive Wassermann reaction by means of the lipoidal "antigen" also bind complement when the lipoids are replaced by the extract or emulsion of *Spirochata pallida*?

2. Is it possible to intensify the ordinary Wassermann reaction in syphilitic serums by adding the extract or emulsion of the *pallida*?

The second problem was set up through the supposition that certain syphilitic serums giving weak or negative reactions with the lipoidal "antigen," may nevertheless contain sufficient antibodies which, while on account of the absence or insufficiency of the *pallida* substance are only partially detected or remain unrevealed, may be brought into evidence by the addition of the real antigen. This assumption originates from the conception of Citron, who considers that the lipoidal "antigen" is merely an intermediary to bring about the combination of the antibody and real antigen in the syphilitic serums where they are supposed to be existing side by side without entering combination until the lipoids are added.

In deciding the first point, I have prepared the aqueous extract and emulsion of *Spirochata pallida* derived from two different modes of cultivation, namely, one in the testicles of rabbits' and the other in artificial culture media. Both materials were pure and contained an enormous quantity of *Spirochata pallida*. In making up the extract I have employed several strains of the *pallida* in order to obtain a polyvalent antigen. In case of syphilitic orchitis of rabbits, the indurated testicles of each strain were removed from the animals (under usual aseptic precaution), and these different strains were put together in a sealable porcelain jar for grinding by means of marbles in a shaking-machine. An adequate quantity of sterile physiologic salt solution was added before the grinding. The disintegration of the *pallida* was almost complete after six hours. The emulsion thus obtained was then carefully transferred to a sterile bottle, heated to 60 C. for thirty minutes and 0.4 per cent. phenol (carbolic acid) was added. This was used as the antigen. For the control a similar extract with normal rabbit's testicles was prepared.

For making the antigen from pure cultures of the *pallida*, the technic used was identical with the foregoing. The control extract was prepared with uninoculated media. The culture medium consisted of one part of ascitic fluid and two parts of a weakly alkaline agar to which a piece of fresh sterile rabbit's kidney was added. For the antigen only the colonies of the *pallida* were employed, the tissue (kidney) being previously removed.

After determining the anticomplementary titer of each emulsion, I have tested a large number of syphilitic serums from human subjects and also from rabbits with syphilitic orchitis. Non-syphilitic serums both of man and rabbits were used as controls. Throughout the entire series of experiments, the antihuman hemolytic system (Noguchi) was used. The serums were inactivated at 55 C. for thirty minutes. This precaution is absolutely necessary as the antigens contain various proteids capable of causing a proteotropic fixation with unheated serums.

In order to know the relation quantitatively between the Wassermann reaction produced by the lipoidal "antigen" and the fixation by the *pallida* extract as antigen, I have titrated the positive serums for their fixing-power simultaneously with the lipoidal and *pallida* antigens.

The Wassermann reaction is present in most of the syphilitic cases here studied and also in two cases of tuberculous and mixed type of leprosy. It is more pronounced in untreated early cases, and in hereditary cases, than in the treated cases. It is present in tertiary cases in a lower percentage. On the other hand, a positive reaction was obtained with the *pallida* extracts in certain cases with weak or negative Wassermann reactions. These occurred, however, only when the patients were under treatment or had been syphilized many years ago without being cured. It is also remarkable to notice that in many cases of tertiary syphilis and later hereditary cases, there was a partial fixation, irrespective of the absence or presence of fixation as indicated by the lipoidal antigen. No fixation was obtained with the *pallida* antigen made from pure culture in the case of leprosy, while the extract from syphilitic as well as normal rabbit's testicles gave a positive reaction.

These facts may be considered as deciding (1) that the Wassermann reaction is caused by the lipotropic substances, but not by the antibodies which combine specifically with the *pallida* antigen; (2) that the fixation produced by the culture *pallida* antigen with certain syphilitic serums is caused by the specific antibodies contained in the latter and may constitute a specific diagnostic method for syphilis; (3) that the fixation caused by the testicular extracts behaves like the culture *pallida* extract in the majority of cases, but when the serums (syphilitic or leprosy) contain abundant lipotropic substances, it may give a Wassermann reaction as well, which is not the case with the culture *pallida* antigen; and finally (4), that in the serum of rabbits with active syphilitic orchitis there is no indication of the presence of a sufficient amount of the antibodies for the *pallida* antigen, although it gives a strong Wassermann reaction. It remains to be seen when and under what conditions the specific antibodies for the *pallida* will most abundantly be formed in syphilitic

patients. At all events it is rather remarkable that the amount of the antibodies detectable by the *pallida* antigen in these cases was so small as compared with certain other infectious diseases, in this respect. It is not improbable that those who come under our care belong to a class of individuals with comparatively less resistance to the *pallida* and are incapable of producing sufficient antibodies, while there are many who respond to the infection with more vigorous formation of the antibodies and reduce the infection to a harmless latency or even destroy the *pallida* completely. This latter class of infected persons do not, of course, frequent our clinics. If this is the case, it would be of immense prognostic importance to check a patient from the beginning of infection by the complement fixation test with the *pallida* antigen, thereby determining the resistance of the patient against the disease. We have in the Wassermann reaction a fair measure of activity of the infecting agent, and now we will have in the *pallida* fixation reaction a gauge for the defensive activity of the infected host.

DEMONSTRATIONS

In order to illustrate the foregoing address with practical demonstrations, I have exhibited the macroscopic specimens (under the darkfield illumination) of *Spirochæta pallida*, *microdentium*, *macrodentium* and *refringens* in pure cultures. For the assistance and necessary arrangements for the occasion, I express sincere thanks to Professor Zeit and his assistants.

For the demonstration of the luetin reaction, I am under deep obligation to Dr. W. L. Baum, Dr. B. C. Corbus, Dr. O. Stein and Dr. J. Grinker, who placed a series of syphilitic, parasymphilitic and non-symphilitic cases under my disposal. For the privilege of using the clinic of the Chicago Post-Graduate Medical School during the preparation for the demonstration, my thanks are due to its president, Dr. Emil Ries. It is my pleasant duty to express my gratitude to Dr. Corbus, who has also given me a series of syphilitic cases (private), for which he has been keeping all important data for a number of years. The most important feature of his private cases lies in the fact that the patients were treated by him according to a biologic measure, namely, in regard to the Wassermann reaction. The patients selected by him were those who had been or are still being treated with salvarsan and mercury, and had lost the Wassermann reaction a long or short time ago. As will be seen in the following records, some of the cases with negative Wassermann showed a positive luetin reaction, while others were negative. It seems to be highly important to keep track of the latter group of cases for many years to come, since, in my opinion, these patients with negative, clinical, serologic and allergic findings may belong among the cured patients. This assumption does not, however, apply to those patients who had been treated energetically before the allergic state of the skin was developed (such as cases of primary syphilis), because in these instances the luetin reaction may never be manifest. The prognostic value of the luetin reaction would, therefore, become obvious only in those who had had a generalized syphilis before the treatment.

Below I present brief records of the cases used for the demonstration. The Wassermann reaction on these cases was made by Dr. Corbus.

CASE 1.—N. M., American woman, aged 29, clinic patient of Drs. Baum and Corbus. Present condition: Early secondary lues. Treatment: Mercury rubbings. Wassermann reaction not taken. Luetin mild positive.

CASE 2.—F. B., white man, aged 44, clinic patient of Drs. Baum and Corbus. Present condition: Latent secondaries. Chancre in October, 1910. Treatment: Mercury rubbings and internal. Wassermann positive. Luetin papular distinct (positive).

CASE 3.—J. D., American man, aged 34, clinic patient of Drs. Baum and Corbus. Present condition: Latent secondaries. Infected two years ago. Treatment: Mercury rubbings. Salvarsan injected in oil suspension 0.6 gm. Wassermann positive. Luetin mild positive.

CASE 4.—S. B., American man, aged 26, clinic patient of Drs. Baum and Corbus. Present condition: Recurrent secondaries. Treatment: Mercury rubbings intermittent. Wassermann positive. Luetin distinct papular (positive).

CASE 5.—W. H. W., American man, aged 23, clinic patient of Drs. Baum and Corbus. Present condition: Marked secondaries. Treatment: Salvarsan in oil suspension, February, 1912. Mercury intermittent. Wassermann not made. Luetin distinct papular (positive).

CASE 6.—L. J., colored man, aged 23, clinic patient of Drs. Baum and Corbus. Present condition: Secondaries. Eighteen months since treatment. Treatment: Intravenous injection of salvarsan eight months ago. Mercury rubbings. Wassermann positive. Luetin suppuration on both arms. No difference between control and luetin.

CASE 7.—C. K., German man, aged 22, clinic patient of Drs. Baum and Corbus. Present condition: Secondary period. No symptoms. Chancre four years ago. Treatment: Mercury rubbings. Salvarsan—intravenous injection May 20, 1911; June 7, 1911; October, 1911; November, 1911. Wassermann not taken. Luetin papular reaction distinct (positive).

CASE 8.—H. K., American man, aged 46, clinic patient of Drs. Baum and Corbus. Present condition: Cerebral gumma. Treatment: Mercury intermittent. Wassermann positive. Luetin large full indurated papule. Typical positive reaction.

CASE 9.—J. S., colored man, aged 34, clinic patient of Drs. Baum and Corbus. Present condition: Probable tertiary. No history. Treatment: Internal about one year. Wassermann positive. Luetin secondary infection. All reactions, both control and luetin.

CASE 10.—A. M., American woman, aged 21, clinic patient of Dr. Stein. Present condition: Congenital lues. Treatment: None at any time. Wassermann negative. Luetin distinct papular (positive).

CASE 11.—C. H., American man, aged 16, clinic patient of Drs. Baum and Corbus. Present condition: Congenital lues. Treatment: Mercury intermittent. Wassermann positive. Luetin pustular reaction (positive). Slight *Umstimmung*.

CASE 12.—W. J. H., American man, aged 42, clinic patient of Dr. Grinker. Present condition: Paresis. Probably infected twenty years ago. Treatment: Neglected. Salvarsan injected intravenously by Dr. Corbus Dec. 1, 1911, and Feb. 5, 1912. Vigorous mercury rubbings between salvarsan injections. Wassermann positive, Nov. 28, 1911. Luetin distinct papular (positive).

CASE 13.—Control case. S. C., colored man, aged 37, clinic patient of Drs. Baum and Corbus. Present condition: No history of initial lesion. No secondaries. Believed to be infected twenty years ago. Treatment: Mercury intermittent. Wassermann negative. Luetin negative.

CASE 14.—C. D., American man, aged 26, private patient of Dr. Corbus, treated after the biologic method. Present condition: Probably cured. Tonsillar chancre, November, 1910. Treatment: Salvarsan injected intramuscularly, Nov. 7, 1910, and Dec. 15, 1910. Wassermann positive, Nov. 28, 1910; negative, Jan. 23, 1911; negative, May 9, 1911; negative, March 12, 1912. Luetin negative.

CASE 15.—F. S. American man, aged 22, private patient of Dr. Corbus, treated after the biologic method. Present condition: Early secondaries. Last symptoms, Sept. 4, 1911. Treatment: Injected salvarsan in oil suspension, Sept. 4, 1911; intravenously, Feb. 6, 1912. Vigorous mercury rubbings between salvarsan injections. Wassermann negative, Jan. 16, 1912. Luetin distinct papular (positive).

CASE 16.—C. L., American man, aged 38, private patient of Dr. Corbus, treated after the biologic method. Present condition: Incipient tabes. Infected eleven years ago. Treatment: Salvarsan injected intramuscularly, Jan. 9, 1911, and March 5, 1911; intravenously, Oct. 6, 1911, and Jan. 13, 1912. Vigorous mercury

rubbings between injections. Wassermann positive, Nov. 28, 1910; positive, Feb. 23, 1911; negative, July 7, 1911; negative, Oct. 6, 1911; negative, Jan. 9, 1912. Luetin negative.

CASE 17.—M. A., American man, aged 36, private patient of Dr. Corbus, treated after the biologic method. Present condition: Secondaries. Last appearance of palmar syphilid, seven months ago. Treatment: Injected salvarsan intramuscularly, Jan. 28, 1911; intravenously, March 18, 1911; intramuscularly, August, 1911. Vigorous mercury rubbings between salvarsan injections. Wassermann negative, Aug. 22, 1911; negative, Jan. 16, 1912; Luetin distinct papular (positive).

CASE 18.—P. S., American man, aged 22, private patient of Dr. Corbus, treated after the biologic method. Present condition: Cured. Primary lesion, Jan. 21, 1909. Treatment: Vigorous mercury rubbings. Cure obtained before salvarsan was administered. Injected salvarsan intramuscularly, Jan. 17, 1911. Wassermann negative, Dec. 10, 1910; Feb. 15, 1911; April 15, 1911; Aug. 1, 1911, and Dec. 15, 1911. Luetin negative.

CASE 19.—O. J. G., American man, aged 31, private patient of Dr. Corbus, treated after the biologic method. Present condition: Latent secondaries. Chancre, September, 1905. Last symptoms, Oct. 20, 1910. Treatment: Neglected at first. Injected salvarsan intramuscularly, Oct. 20, 1910, and Dec. 11, 1910; intravenously, Sept. 2, 1911, and March 9, 1912. Vigorous mercury rubbings between salvarsan injections. Wassermann positive, Nov. 11, 1910; negative, Jan. 1, 1910; positive, March 8, 1912. Luetin distinct papular (positive).

CASE 20.—A. G., American man, aged 20, private patient of Dr. Corbus, treated after the biologic method. Present condition: Secondaries. Infected Jan. 1, 1911. Last symptoms May 6, 1911. Treatment: Internal. Salvarsan injected in oil suspension, 0.6 gm., May 6, 1911; intravenously, 0.4 gm., Feb. 24, 1911. Vigorous mercury rubbings between injections of salvarsan. Wassermann positive, April 20, 1911, and March 4, 1912. Luetin distinct papular (positive).

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ESSENTIAL FACTORS IN THE DEVELOPMENT OF SURGERY *

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Before entering on my theme I desire to express to the officers and the members of this distinguished body of medical men my appreciation of their courtesy in inviting me to address them. The great state of Illinois and the city of Chicago occupy a strategic position in the Middle West, enabling the profession of the state to exercise unusual influence throughout the whole United States. It is for this reason that I feel it proper to discuss before you the conditions essential to the development of one branch of our profession. This seems to me wiser than that one who has retired from practice should attempt to discuss the new developments of surgery, or recur to historical questions, traversing ground much of which has so often been considered.

The fact that I have retired from the profession after long years of active work may perhaps make it not inappropriate or unseemly for me to speak plainly on certain subjects which, I believe, concern the profession of medicine as a whole, but especially that of surgery.

In judging of the career of a surgeon there are certain criteria by which to estimate him. I shall mention four. The first two relate to his judgment. How frequently has he followed innovations which have proved either worthless or harmful, and on the other hand, how many new developments have failed to enlist his cooperation and adoption?

* Oration on Surgery, read before the Annual Meeting of the Illinois State Medical Society, Springfield, May 23, 1912.

The second two factors are, what have been his contributions to knowledge, either by research, or by teaching and writing? It may be worth while to consider more fully these questions.

As to the first question, "What worthless innovations have been avoided?" much might be said. Were we to consider candidly how many innovations are valuable I am sure we must conclude from experience that those of value are, when compared with their total number, relatively few. It is an evidence of good judgment on the part of a surgeon that he is rarely enticed to the use of new methods, deserting old ones whose value has been demonstrated by experience, only to find later that he has been led astray. Two kinds of surgeons adopt all innovations. One desires to be fully abreast of the times, utilizing every means which may benefit his patient. This is of course commendable. The second grasps at every innovation, hastening into publicity that he may gain prominence thereby. Both men do untold harm. It would be interesting to collect and present to the profession a list of the great number of innovations which have met wide acceptance, and which later have been found to be valueless and perhaps deleterious. I might mention several of these. At the time when Koch's antituberculin treatment was made public (be it said in justice, contrary to Koch's wishes) the professional world at large was carried off its feet as it were, and it was astonishing to see the clinical observations of many men, going to demonstrate the value of the injection of tuberculin in combating tuberculosis of all forms. Not many months later Virchow showed that the most extensive cases of miliary tuberculosis which he had ever seen had followed these injections.

When leukocytosis was presented as demonstrating the necessity for immediate operation, especially in appendicitis, the surgeon hesitated to disregard it. I do not doubt many surgeons present felt themselves forced, contrary to their clinical judgment, to operate on certain cases in which leukocytosis was present, on the ground that its presence rendered an operation imperative.

At one time cryoscopy was supposed to demonstrate positively the performance or non-performance of normal function on the part of the kidney, and thus determine the question of nephrectomy, only to find later that the elements of error in observation are large.

While it is important to recognize that occasional errors must occur, in the laudable efforts to advance surgical knowledge, and while certain partially successful methods may be stepping stones to others of greater and permanent value, it must be remembered that many new methods have lurking in the background, unappreciated evils. I can remember when chlorate of potash was freely administered in diphtheria, only to find later that when swallowed in the doses often prescribed it became a deadly poison: also that in chloral hydrate it was claimed a new and wholly innocuous hypnotic had been discovered. If in adopting new methods there is not room for clinical judgment based on long experience and careful observation (and I use the latter phrase advisedly) then clinical observation must be of little value, and a lifetime of observation must have been largely wasted. Every wise clinician must cooperate

with the laboratory and utilize its findings to the fullest extent possible, but when things, whether the product of chemical, microscopic or clinical investigation are presented they should, before adoption, commend themselves to one's judgment, or else be accompanied by such evidence as to convince a judicious clinician of their value. It is impossible to question the fact that enormous suffering has been entailed on humanity in the haste to adopt new and untried methods, by men lacking in clinical judgment and worse still by men who follow every new fad that they may thereby exploit their own reputations.

The reverse proposition must not be overlooked. A vast number of men after leaving the medical school learn little by reading or experience. I have often heard men approaching the termination of their professional careers still quoting the teachers of their youth.

A large number of you will recall the opposition developed to the principles of antisepsis and asepsis, innovations which have revolutionized the world of surgery.

Not to detain you longer with this question, this much seems evident, that a just estimate of a surgeon's career may be based in large part, first, on the errors which he has avoided, and second on the small number of valuable additions to surgical knowledge which he has failed to adopt.

I said there were four considerations in estimating the career of a surgeon. The third of them is his contributions to surgical knowledge. We should, however, distinguish carefully between the man whose contributions stand the test of time and the man who is constantly presenting new things which later prove useless, and not infrequently injurious. The latter contribute not to human relief, but rather to human suffering. A man of this type recently said: "One must keep some new thing constantly before the public. The failure of one thing will be forgotten by the presentation of the new." Contributions to human knowledge are priceless. Contributions to the exploitation of professional publicity are worthy of contempt.

The fourth contribution made to surgery is that of the teacher, whether as a lecturer or a writer. The teacher who increases the knowledge of students, not only by what he imparts, but also by stimulating in them a love for it, renders a great service. That students should bear with them from college habits of study and investigation adds vastly to their future effectiveness.

Medical literature may also be of the greatest value. Unfortunately there is a vast amount that is worthless. Much is ill considered and inaccurate, being produced simply as a means of publicity, and in various treatises on surgery, articles bear the names of men well known, when as a matter of fact the articles have been written by inexperienced assistants and can have no value, save as compilations. It is unfortunate that one must almost of necessity know a man personally to know whether his writings are to be taken at their face value.

In summarizing thus somewhat hastily that which may serve in estimating the intrinsic worth of a surgeon, certain considerations have doubtless been omitted. Enough, however, has been said to indicate

the sterling qualities which are essential to one who should permanently enjoy the full respect of the profession and the public.

There remain for consideration three things essential to the development of surgery and surgeons: (1) the personal qualities of the surgeon, (2) the training best suited to his development and (3) the extraneous conditions under which he must practice his profession. Omitting a consideration of the intellect, character and personality essential to the surgeon himself, mention should be made of good health. To endure without good health the enormous strain of active professional life is impossible. Under the burden a large number of men succumb. The number of surgeons who have at an early age lost their health, if not their lives, is large, while those who have been compelled to abandon practice at an age when in other professions men are still active is very great. The saying that "surgery is a young man's job" is true. That it is a strong man's job is equally so.

To discuss exhaustively the training of a surgeon would be to enter on a very large field. The subject is, however, of so great importance as to demand brief consideration. Through great natural ability certain men have achieved eminence, though they have lacked training. On the other hand, good training is of the greatest importance, and on it in large measure depends the future development of surgery in the United States. Opinions differ widely as to what should be required of students before they are permitted to begin the study of surgery. That some definite standard of knowledge must be adopted by each school is evident, since without it, teaching which a certain proportion of the students are qualified to understand, is beyond others. Unquestionably standards of admission must vary somewhat since sparsely settled communities cannot command the services of men with the most extensive training. None the less these communities need professional care. What is lacking in surgery is not, however, so much numbers as quality, and a much smaller number of surgeons could serve the community far better than it is served at the present time. A college degree has been accepted as the standard of admission by some of our best medical schools. Personally I believe that this is at present the most available standard. I am free to confess, however, that the standard is not wholly satisfactory. What is requisite is, first and foremost, an accurate and well-trained mind. Many college men are sadly lacking in this as every medical teacher knows. Personally I advocate strongly as preparatory to the study of medicine such a breadth of training as is represented by the college degree, since breadth of culture is a most valuable asset to any man and to none more than to the surgeon.

Professional training must be general and comprehensive. It is a great misfortune that a young man should start on the study of medicine with a special department so in view as to lead him to consider other departments unessential to him. A man should be thoroughly intelligent in every department of the profession. Such knowledge is essential in guiding him in the recognition of complications which may arise in his practice. Specialization of knowledge should be postponed until after

the general course of medical training is completed, and better still, until after the acquirement of experience by an assistantship in a hospital. Personally I do not believe in any attempt toward training specialists during the regular medical course. In the first place four years are all too short to permit a student to acquire the essential general knowledge. I question if our best schools will not soon require five years of study. In the second place no question of special study should detract from the student's attention to his broad and general training. As to the sectional teaching which commonly attends this attempt at special training, though doubtless a marked advance, and of great value in bringing the student closer to his material and his teacher, it has a grave defect, if by its introduction the student is deprived of the teaching of the great clinician, such as is gained only in the large clinic and before a large body of students. A teacher of large experience will rarely undertake, and still more rarely succeed in repeating the same instruction to successive sections of students month after month, and should he undertake it, it is impossible for him to place before these sections successively the wide range of cases he could present to an entire class over a longer period of time. I would by no means wish to be understood as underestimating the superior value of a large amount of intimate personal teaching and close contact with patients, but I believe that to introduce exclusively sectional teaching and thereby displace a limited amount of teaching by the great and experienced clinician would be to deprive students of that which is of the greatest value.

In saying that a student should receive a general training will not prevent certain men, who through their early surroundings have had previous knowledge of the medical profession, from deciding before entering the medical school what branch of practice they propose to follow after graduation. For these men great proficiency in certain departments of knowledge is essential.

Unquestionably to the surgeon a thorough knowledge of anatomy is highly important, and any man who proposes to be a surgeon would do well to do postgraduate work along anatomic lines, as in fact is common in some countries.

No training is of greater value than that in medical or general diagnosis. A surgeon who is not a good diagnostician is an unsafe surgeon. He must be thoroughly trained in this department if he is to escape doing operations on those who can be equally if not better relieved by medical measures. The possibility of relieving patients without surgical measures should always receive first consideration. It is also rarely that the physician will undertake to be responsible for operations made on an incorrect diagnosis. The surgeon should make his diagnosis independently before he is willing to operate, and should not be dependent on others. The great value of medical knowledge is easily perceptible in deciding questions of intestinal perforation in typhoid fever; in the decision as to whether certain gastric disturbances may require surgical interference, or whether wise medical care (and I use the term advisedly) should first be employed. There is a whole series of abdominal conditions

which require a knowledge of medicine as well as of surgery. In the thorax, too, the surgeon must be able to locate collections of fluid, and not depend on others to tell him where to operate. To do this is often to lean on a broken reed. The blame of any misadventure following operation rests on the surgeon. The same necessity holds true in the surgery of the nervous system, whether for traumas, tumors, abscesses or hemorrhages. I do not wish to be misunderstood. No man can become so much master of special departments that he will not welcome and utilize to the utmost the knowledge of specialists, but unless intelligent himself, he is not in a position to estimate the opinions of others at their true value.

The amount of special training given on any subject during a course of undergraduate study can, under no consideration, entitle a man to pose before the profession or the public as a specialist in any department.

There remains, however, one department of knowledge which should receive fuller attention, and that is pathology. A knowledge of this subject is of the greatest importance. In my opinion it is so important that I believe that there should be a special department of surgical pathology in every medical college, and that every well-equipped hospital should have a department of clinical surgical pathology, conducted under the supervision of the surgeon, having a resident surgical pathologist, the department to be closely associated with the department of general pathology. The surgeon should himself understand pathology, gross and microscopic, and bacteriology as well, and should constantly frequent his laboratory. The knowledge gained by so doing will greatly increase accuracy of observation and add to clinical efficiency. If I were to designate any department of knowledge in which I should say American surgeons are especially deficient I should say that it was that of the pathology of surgery.

I know that in recent years many have decried instruction by operations on the cadaver as of little value. Possibly their importance for the general student has been overestimated. For those who expect to become surgeons I believe this instruction has great value, though it may well be given after graduation and hospital residence. I recall operative courses given by such great men as von Langenbeck and Volkmann. Some of the greatest surgeons of Paris devoted much time to them. With anesthesia and the absence of suffering on the part of the patient the value of manual dexterity, nicety of operating and dispatch are frequently lost sight of.

It was once the pride of surgeons to operate in full dress, and with a few rapid passes of the knife perform difficult tasks. While no one will emulate this example, it would be well if modern surgeons were trained to the same dexterity. That "time is money" is not truer than that "time is life."

Operations on the live tissues of dogs doubtless give valuable training. Operations on preserved cadavers with hardened tissues are very unsatisfactory. I thoroughly believe that valuable anatomic knowledge and manual dexterity can be gained by operations on fresh cadavers.

Surgical diagnosis is a subject requiring special care. Diagnosis by exclusion is common in medicine, but I fear it is less so in surgery. The apparent obviousness of diagnosis in many cases tempts students to haste. To avoid this tendency they should be taught to consider every possible malady which simulates the disease in question, and to exclude it. Only by this method will they become careful diagnosticians. When one considers how one must weigh the observations of patients, accepting some as important, rejecting others as errors, how by palpation and percussion other facts are elicited or possibly only suspected, and how by instruments of precision added data are gained, the whole to serve by a process of deduction in forming a diagnosis, it is then and then only one realizes that the surgeon requires the qualities of the most expert of judges, for surely no one has more occasion carefully to weigh the evidence on which depends human life.

Omitting further discussion of professional teaching, there remains for consideration hospital residence in its relation to the training of surgeons. To my own mind a medical internship in a hospital would be of vast value to any young surgeon; a surgical internship is well nigh indispensable. The great difficulty of combining the two in a single hospital service is unquestionable. To accomplish satisfactory work in surgery the assistant must be under accurate and continuous training. Frequent change of assistants is incompatible with safe surgery, accurate records and satisfactory investigation. The absence of thorough medical knowledge is, however, a great misfortune to any surgeon. The patient should have the benefit of the certainty that it is not medical but surgical care which is essential to his relief. After operation, not infrequently conditions arise which need for their relief medical knowledge, and the patient is fortunate if he have a surgeon who recognizes this and is sufficiently skilled therapeutically to relieve him.

While few may be able to give the time to acquire the ideal training, it is possible for the medical and surgical services of a hospital to be so conducted that each may profit regularly and continuously by the material and experience of the other. The value of such association has already been pointed out in the treatment of typhoid perforations, thoracic effusions, cerebral hemorrhage, etc.

Some physicians rarely call the surgeon until the time for advantageous operation has passed. They aspirate thoracic abscesses in the absence of the surgeon, rendering it at times impossible for the surgeon later to discover the abscess cavity. Both departments of a hospital should work in closest harmony. Thus will patients be most benefited, and thus only will the resident assistants gain a correct estimate of the relative interdependence of medicine and surgery.

I wish before leaving the subject of surgical training to speak of but one other thing, and that is the value to the young surgeon after his school and hospital training of seeing the methods of men of other hospitals and of other countries. I think the feeling has been growing, and I desire emphatically to say, in my opinion, rightfully so, that surgery has reached a high plane in the United States, and that one may

here see clinics which compare favorably with any in the world. Before entering on private practice it would be well for the young surgeon to see many of these. It is, however, of greatest value that he see those of Europe. Though they may not be so preeminent relatively as a generation ago, they are still of great value. To compare the methods of many men and many lands ripens the observer's judgment. He learns that other methods are equal to, if not superior to his own. He learns that there are teachers and surgeons superior to his old chief. It is by seeing and realizing this that the wise student becomes emancipated and learns to form independent judgments. He goes away a journeyman. He returns a master workman. When one has seen the *Meisterstück* in the museums of the old guild halls of Europe and appreciated the training which entitled the maker to be called a masterworkman, he understands the part which the *Wanderjahr* bore to the development of the journeyman. But let no one deceive himself. Full appreciation of foreign clinics is possible only to one who fully understands the language in which they are conducted. Flitting visits to clinics without complete understanding of all that is said detracts much from their value.

There is another thing which we may well learn abroad, and that is breadth of surgical knowledge. As clinicians I believe there are many American surgeons who have few superiors. I have no hesitation in saying that the best of our hospitals compare favorably with the best of Europe. Personally I should trust myself to many of my surgical friends, numbers of whom belong to this association, as quickly as to any in the world. On the other hand, I believe a man of wide observation and acquaintance both in this country and in Europe must acknowledge that for breadth of training and scholarship there are few surgeons in the United States who have reached the same stature as the best surgeons of Europe. Let us be candid among ourselves! How can it be otherwise? Here a young man spends four years in a medical school, a year and a half in hospital and perhaps one, or possibly two years abroad, at most seven and a half years. A few may spend more time, but they are relatively few. He may then secure a position in a dispensary! Some years later he may be appointed to a service of a few months yearly on the staff of a small hospital, or to a subordinate position on the staff of a large hospital. Several, sometimes many years pass, before he secures a position of importance, with a large material of his own. In the meantime he has slaved and worked as few men in other professions ever work, with no remuneration and little recognition, earning his living from small fees, carrying on research and literary work, often far into the night. How is it possible under such conditions to expect of a man the highest and the best? Those who can endure the strain, reach distinction, and live to reap the reward are very few indeed. Compare this with the career of the German surgeon. He completes his preliminary training at the average age of 20 years. He studies medicine six years. Not infrequently he serves for a year as an assistant in an anatomical and perhaps also a pathologic laboratory. Not to enter too much into detail, he then becomes an assistant in some surgical clinic

with immense material, where the variety of cases to be observed is enormous. It is by no means rare for a young surgeon to be attached for a short period to several clinics in succession. He then receives a regular appointment to some clinic as assistant. I have personally known many men to serve in this capacity for four, five or even six years. As second assistant a man receives sufficient remuneration to enable him to live comfortably and he usually operates on many cases. As first assistant he does a large amount of operating and if in a university performs the functions of the professor in his absence. By teaching and private fees he also enjoys a considerable income. Thus, beginning his professional study at 20, he is perhaps eight years without remuneration, and for a year or two he may gain little beyond a livelihood. By the age of 30 he becomes a first assistant, when his position and living are well nigh secure. If he is possessed of ability, commonly after from three to five years he is called to become chief of some large hospital or professor of surgery in one of the smaller universities. Here he is absolute in authority in his clinic; his professional and social position are secure; he receives a small salary and when he grows old he receives a pension. Distinguished ability insures him honorable titles, which in Germany have great value, and there is open to him the professorships of the great universities, with their great rewards. From the time of his assistantship onward he has official vacations, paid assistants, assured income. He commands leisure for reading and literary work and facilities for investigation. Let any distinguished surgeon in this audience compare these advantages with his own, and only then will he realize to the full extent the relative disadvantages under which he has labored. If our young men by travel can come fully to appreciate the great disadvantages under which they labor, and still more, if those who have already reached the height of their careers, or are approaching the end of their labors stop to consider, is it not possible that the young man may be stimulated and inspired, and that the older surgeon may become more helpful and more generous to the young? "Hope deferred maketh the heart sick," and many is the assistant to whom the upward way has seemed long; many the young man who from lack of encouragement has failed. Gentlemen, I have cited German conditions alone, since time fails me to speak of others. All advantages and disadvantages are with no one country. We may learn much in many lands, and a full appreciation of the conditions in other countries must aid us in developing our own.

We have thus sketched rapidly the factors entering into professional training. We now turn to the consideration of the conditions which surround the practice of surgery. I have already said that the proportion of thoroughly trained and scholarly surgeons is less than could be desired. We all of us know surgeons who by native ability and great labor have reached positions of deserved eminence. Who will question that greater opportunity might have brought them greater success? Who can doubt that greater training and a better literary style might have made them more effective in the transmission of their knowledge, whether as teachers

or writers? Because some have attained distinction through natural ability though lacking early opportunity, will any one question the desirability of developing a professional standard which, for breadth of scholarship, power of expression and general culture will place the profession of this country in a position of preeminence, view it from what standpoint you will?

The conditions under which surgery is practiced in this country have undergone rapid change during the last twenty or thirty years. In the early part of my professional career it was relatively rare for operations on people of means to be performed in public hospitals. A very limited number of private hospitals existed. Most operations, save those on people of relatively small means, were performed in homes. The younger men among you have no conception of the fatigue and mental anxiety attendant on operations thus performed, with the associated dangers of sepsis. The development of hospitals in this country has been remarkable and their equipment is unsurpassed by any in the world. This development came first in the large cities, and the excellence of the work performed attracted the attention and commanded the confidence of the public, until now almost every one looks on the hospital as the safest place for operations. There is, however, a side of this question that a surgeon in active practice might hesitate to discuss, lest a selfish motive might be ascribed to him. Every man in this audience is acquainted with hospitals which command his fullest confidence. Relieved by my position from all question of personal interest, I think you cannot take it amiss if I state frankly that there are other hospitals which are absolutely undeserving of confidence. In our large cities are hospitals poorly equipped, manned by men unworthy of confidence, while in almost every small town are being built hospitals wholly unworthy of the name: and in these are being undertaken operations which are safe only in the most experienced hands. The great public does not understand the difference. To them a hospital is a haven of refuge, a place of safety. This ought to be so. Every man in this audience knows it is not. What is the remedy? There is but one, and it is in the hands of the general profession. No surgeon or hospital should be recommended for any reason than because they are able, trustworthy and safe. Do not misunderstand me. I do not stand for the man who is notorious, but for the one who is competent. I do not criticize a hospital because it is small, whether it is in the city or country, nor do I commend a hospital because it is large. There is but one measure. Is it safe? Can it do better work than others? The public has not yet learned to discriminate. The profession should have already done this, before the public shall have become our critics. For the development of surgery the profession needs the complete and also the permanent confidence of the general public. It is only as we enjoy this that we shall have the fullest support, whether it be for private, endowed or municipal institutions. What is true of institutions is equally true of men. I can remember the time when one could count on the fingers of his two hands, if not on one hand, the number of men in the United States who practiced exclusively surgery.

Conditions have changed greatly. Unfortunately there is now too large a number of so-called surgeons, undeserving of the name. I remember a general practitioner who desired to enter on a certain department of surgical work. He disappeared from his home city six weeks and returned a full-fledged specialist. His wife remarked that she did not realize a man could learn so much in so short a time.

While postgraduate schools have done a great and valuable work in supplementing the training of medical practitioners, and while I do not wish to be understood as criticizing them in any unjust way, it is but the simple truth to say that too large a number of so-called specialists in this country are the product of a few short weeks spent either in postgraduate schools or abroad, by men ignorant of the languages of the countries which they visit. They return as specialists, appealing to the support of their fellow practitioners and to the public. The public is grievously wronged. The profession, if it recognizes their claims, is deeply culpable. No man should be recognized as a specialist who has not by prolonged study and large opportunity achieved the unusual knowledge and experience which entitle him to be distinguished by his confrères as a man worthy of special recognition. To support a man not thus equipped is to aid in foisting him on an indiscriminating public and is to do a great wrong. Too many men in this country posing as specialists are worthy only of special contempt. The man worthy of the name we should all delight to honor.

There are several other topics which I almost hesitate to discuss. I believe, however, there are some things which ought to be said, and I know of no audience and no state in which the attitude of the profession is more important than in Illinois. I shall, therefore, state my position clearly, relying on your candor to receive my criticisms in the same spirit of fairness with which I shall attempt to present them. One thing of which I shall speak is that of research. To the man who adds to human knowledge is due the greatest honor. To Sir Joseph Lister this came during his lifetime. The world delighted to do him homage. It should thus honor every man deserving of it. A teacher, perhaps the greatest in the United States, has said, "original investigators are few. Men having the requisite qualifications are rare. When you find one cherish him as you would a hidden treasure. Protect him, aid him, honor him." I fear, gentlemen, the glamor of research, with the rewards attaching to successful work, has led to the publication of much the adoption of which has entailed untold human suffering. The profession has been too confiding. It has taken men at their personal estimate, and their publications at their face value. Some have been too ready to seek a reputation as being thoroughly abreast of the times by the employment of every new thing. As I said in the beginning, if clinical observation and experience count for anything they should at least suggest that an innovation is probably wise, safe and worthy of adoption or they should lead the surgeon to caution and make him ask for evidence, before hastening to adopt it.

It is only necessary to follow the career of some men and to have a sufficiently retentive memory to know that they have constantly proposed

new things which have almost invariably proved valueless or even dangerous. It is time enough to publish discoveries after they have received careful consideration, and the place for publication is the professional rather than the Associated Press. Any man of ordinary ability may secure publicity if he will pay the price. There are few, very few, who cannot confine the publications of their doings to professional journals. The man who continuously and universally flaunts his discoveries and doings in the daily papers would be a fitting help-meet for Lydia Pinkham. Men whose wonderful discoveries constantly prove valueless; men who continuously and wilfully court publicity are a curse to the profession. On the other hand, I greatly honor those who have given great labor and even their lives to the development of knowledge. America has made the world its debtor, and there are not a few of our profession whose names should be remembered among the great benefactors of the race. No leaf, however, should be plucked from the wreaths which we would gladly place on their brows, to be given to one who has sought reputation by so-called research, undeserving of the name, or publicity through channels which should not be utilized for the publication of professional work. The profession should be careful to recognize to the fullest degree real worth. It should be cautious not to be misled by that which is spurious. There are some men whom we know, personally whose writings we take at their face value, being confident that they represent careful investigation and a truthful statement of fact. Did we know others equally as well we would feel little assurance of the correctness of their claims either in research or clinical subjects.

There remains but one other unpleasant subject to which I must refer. It is only about fifteen years ago that I heard the suggestion that a commission should be paid by the surgeon to the practitioner bringing him patients. That such a thing could exist in an honorable profession had never before occurred to me. I have only to say that any practice which will not bear the full light of day is pernicious. Should it ever be generally believed that so dishonorable a practice existed, it would cost the profession the confidence of the public. I do not believe that any honorable man who will stop to give the matter careful consideration will ever either give or receive a commission. Men should be sought in consultation for the sole benefit of the patient. No other consideration should weigh for a moment. To follow this method is to deserve the confidence and honor of the community and to build up good men.

I have now finished the consideration of several subjects which, as I said in the beginning, I hesitated to mention, and I am glad in closing this address to turn to a few things which are more agreeable.

There is nothing which contributes more to the success of a hospital and the development of surgery than to have the surgical department under a single control. A small service under one man is much more to be desired than a larger service divided among several men. If it is impossible in existing hospitals to attain to the one man service, it is far better to divide the material and wards so that coexisting services may be absolutely independent of each other. It is well nigh impossible

under the old form of service, rotating every three, four or six months, as the case may be, to install and perfect any method of procedure so as to produce the most perfect results. Though all the men on the staff may have preeminent ability and work harmoniously, exactness of method and continuous observation in wards, operating-rooms and pathologic laboratory are impossible. Assistants are not so thoroughly trained, nor are they likely to be given as much opportunity to perform operations or conduct research and report clinical observations. Records are not likely to be kept on the same plan, and thus any tabulation of results is usually unsatisfactory. The ideal hospital organization is to have a surgical service under a single head, or if this is impossible under heads, each of whom has absolutely independent staffs, wards, operating-rooms and laboratories. No great commercial, financial or manufacturing enterprise can be conducted successfully under divided authority. To conduct chemical experiments, except under a single direction, would be to invite failure. There is no branch of professional activity in which perfection of detail is more important than in surgery. Nowhere is the responsibility greater. It is for this reason I believe a surgeon's authority should be as great as his responsibility. In a word it should be supreme. If with such authority a surgeon cannot produce superior results, I believe the governing authorities of a hospital are fully warranted, after a sufficient time has been given to demonstrate this lack of ability, in vacating his position and filling it with some one more capable.

What are some of the results the surgeon should be able to produce? If given adequate equipment and facilities with a corresponding corps of assistants and nurses he should, first and foremost, produce a united corps of workers. There is every opportunity to arouse their enthusiastic support. Second, he should show superior clinical results. The proportion of deaths to the number of operations should be decreased, the percentage of cases developing sepsis should grow less, and consequently the average length of time spent by each patient in a hospital bed should be shortened. The public knowing definitely under whose care they would come on entering a hospital would have increased confidence. Cases requiring long-continued care or successive operations would be benefited, records, pathologic investigations, research and clinical reports would be more exact and valuable. Teaching would be more effective. The surgeon would make a reputation for his hospital and in return benefit by that reputation. Fewer surgeons and hospitals but better ones would be to the advantage of the public.

To summarize the conditions which will tend to the development of surgery, they are briefly these: broad, accurate (and I emphasize the word accurate) preliminary training; in professional study a thorough knowledge of all general subjects: especially those of anatomy, pathology and medicine; thorough training in surgical anatomy, pathology and diagnosis; an intelligent knowledge of all special departments, in order that complicating diseases may be recognized. This much is essential. None but a school of the first grade can give it. No school can do more than this in four years. The influence of the entire medical profession

should be in favor of medical schools of the highest standards. Training toward specialism should await postgraduate study. After graduation hospital training is indispensable, and the man is fortunate when the various services of a hospital work in such sympathetic association as to give the assistants, not to mention the chiefs, the benefit of mutual observation. Subsequent study in other hospitals of this country and Europe is greatly to be desired.

What has been said of the personal character and qualifications of the surgeon need not be repeated. The profession should show its approval of men of long training, high scientific attainment and correct and honorable methods, by seeking in counsel such men and such men only and by discountenancing the pretensions of all others who do not measure up to this standard. The aim should be to develop hospitals of the highest grade, and to train assistants through a prolonged service to thorough competency. A surgical service under a single chief has great advantages, and should rightfully entail great responsibility. Assistants trained in such a service would be fitted to occupy responsible positions in other hospitals and medical schools. Eminent ability displayed by men in the small hospitals and schools should lead to promotions to positions of greater influence and honor elsewhere. One of our greatest needs is that medical schools should be able to call to a teaching position the man of the highest ability, wherever they may find him, and at the same time provide him with clinical material. Clinical material should go with the teaching position rather than that men should be appointed as teachers because they control clinical material.

Why have I ventured to speak so plainly concerning the essentials necessary to the development of surgery in the United States? It is for the reason that there is absolutely no power to help the profession except the power of such preeminent ability and service as will compel the attention and finally command the enthusiastic support of the public. Abroad surgeons are given by the government salaries as clinicians and teachers. They receive titles of distinction, promotions from one university to another, positions which insure large incomes, and leisure for study and writing. Spencer Wells was knighted. Lister was made a peer. Baron Larry and Civial were the associates of emperors. The statues of Wilms and von Langenbeck stand on the Sieges Säule of Berlin. On the contrary, some of our greatest discoverers and surgeons have toiled by day and carried on research far into the night; have lived unrewarded, died in penury and lie in unmarked graves. Who, of the many who have deserved much, have received adequate reward?

With all my criticisms do not for a moment imagine I do not esteem and honor my profession. The relative progress made by surgery in the United States during the last thirty years is, I believe, unsurpassed if not unequaled by any other country. What is needed is broader training and broader opportunities.

If students will seek only those schools and hospitals which give them thorough instruction, if the profession will recognize as surgeons only those who by character, methods, training and experience are worthy of

the name, if all will unite in so organizing hospitals that authority and control may be coextensive with responsibility, if we will recognize and reward sterling achievement and character, and these alone, we shall do much to secure for surgery and similarly for every department of our great profession the recognition, the support and the honor they so richly deserve.

A STUDY OF SEVEN HUNDRED GENERAL ANESTHESIAS BY THE DROP METHOD

WITH SPECIAL REFERENCE TO THE BEHAVIOR OF THE
EXTRAOCULAR MUSCLES AS AN INDEX OF THE
DEGREE OF ANESTHESIA *

SAMUEL DODDS, M.D.

CAIRO, ILL.

This series embraces all kinds of surgical operations, emergency and otherwise, so it is a fair study of anesthetics under varying conditions. I made clinical notes of each anesthesia. No death occurred under an anesthetic, and in no case in which death occurred subsequent to operation could it be attributed to the anesthetic. No case of ether pneumonia or delayed chloroform poisoning occurred.

Choice of Anesthetic.—As statistics prove that ether is safer than chloroform it should be preferred, except in young children and in old age, unless there are contra-indications, renal disease, acute cold, bronchitis, or other trouble in which increased secretion of mucus caused by ether might interfere with respiration, or might lead to some unpleasant after-effects.

In order to decide which drug to use, and in order that it may be given satisfactorily, the patient should have had a physical examination and should come to the operating table with an empty stomach and a clean intestinal tract; but of course in emergencies it is usually not possible to do anything more than listen to the heart and lung sounds, observe the condition of the arteries and approximate the blood-pressure. So it is that oftentimes an anesthetic is not given under the most favorable conditions.

There are physical conditions that render one an unfit subject for both anesthesia and surgery; there are other conditions that preclude anesthesia but will admit of surgery. A man, aged 29 years, with badly damaged heart valves, with cyanosis, dyspnea and other unfavorable signs, was operated on safely and painlessly under cocaine for carcinoma of the testicle.

The question of administering an anesthetic to one with valvular disease is a matter of judgment; each case must be decided on its merits. To systematically deny every one with a heart murmur the benefits of needed surgery is wrong: A woman, aged 31 years, with

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mitral regurgitation, but whose compensation was well established, was operated on for diseased tubes under ether. On general principles, forty-eight hours before the operation she was given digitalis in moderate doses and one-half hour before the operation $\frac{1}{4}$ grain morphin with $\frac{1}{150}$ atropin hypodermically. She went to sleep in ten minutes with three ounces of ether and was under it eighty minutes, taking altogether eight ounces. There was not the slightest untoward symptom at any time.

There are patients who say they have "heart disease" and have been told never to take an anesthetic, but when you examine the heart and find nothing wrong you naturally wonder upon what grounds such advice was based.

Young children do not take kindly to ether; it is irritating to their respiratory passages. It is well to precede it by chloroform until the patient is relaxed.

CLOSED AND OPEN METHODS COMPARED

Stages of Anesthesia.—Under the closed or cone method of giving chloroform or ether there are four stages described: 1. Stimulant. 2. Narcotic. 3. Anesthetic. 4. Paralytic. Quoting briefly from Sollmann's Pharmacology: The stimulant stage is characterized by "a feeling of warmth; sensation of asphyxia; pricking and smarting of nose, throat and conjunctiva; hypersecretion of mucus, tears, saliva and possibly vomiting. Face flushed, pupils somewhat enlarged, pulse accelerated; respiration somewhat quickened and irregular—all effects of the excitement."

Narcotic stage: "Special senses disturbed; hallucinations, sensation of stiffness and want of control of muscles. Patient loses self-control and gives way to manifestations which vary with his character—loud talking, laughing, singing, swearing, etc. Struggling and sometimes convulsions. Skin moist and warm; face reddened; pupils contracted; apex beat more pronounced; sensibility to pain blunted but not abolished.

Anesthetic stage: "Paralysis of the brain and of the motor reflex centers of the cord, and lowering of the medullary centers. Consciousness, sensation, and most reflexes lost—the corneal reflex being among the last. Muscles lax; sometimes relaxation of sphincters. Pulse slow, full, and soft, due to lowered blood-pressure. Respiration slow, shallow, but regular; temperature falls. Face pale with chloroform, often cyanosed with ether."

Paralytic stage: "To be avoided. Progressive medullary paralysis. Respiration becomes irregular, stertorous, labored and then ceases. Skin cold and pale; pupils widely dilated; pulse slow and weak and ceases normally after respiration."

By the open or drop method, there are, clinically, but *two stages*. The first is from the beginning of the anesthetic up to complete anesthesia; the second is from complete anesthesia to the end of the operation. The first is a combination of the first, second and third, described in the foregoing text: Stimulant, narcotic, and anesthetic, but the transition from one to the other is so gradual, with the symptoms throughout usually

relatively so mild, it would seem unreasonable to think the same drug could be made to act so differently merely by the manner in which it is given. The second stage is a prolongation of the end-results of the first stage with three objects in view, namely: A. Keeping the patient free from pain. B. Sufficiently relaxed so that the surgeon may do his work properly. C. Holding the patient on safe ground.

Only so much of the anesthetic should be given therefore as is actually required, and as a rule the amount needed for this stage is relatively much less than for the first stage.

Preparation.—Beside the usual surgical preparation, the evening before the operation, the patient should eat a light meal and take a laxative; the next morning fast and receive an enema. All impedimenta, such as false teeth, "rats," etc., removed; a hypodermic of morphin and atropin given; and all constrictions about the neck, chest, and waist loosened.

The patient lies on the level table with the head resting on a small pillow; the lips and nostrils are anointed with vaselin; wrists secured with a gauze bandage "to keep the arms from falling down beside the table"; another gauze strap placed around the thighs just above the knees and the ends brought under the table and fastened together; the eyes are covered with a soft towel.

HOW TO GIVE ETHER

Inhaler or Mask.—An Ochsner inhaler is used in which is fastened a layer of stockinette and over this are placed four layers of gauze about eight inches square. A second piece of gauze folded to eight thicknesses about three inches wide and eighteen inches long has a buttonhole cut in either end. One buttonhole is slipped over the handle of the inhaler, the gauze wrapped round its circumference and the other buttonhole slipped over the handle. The mask now has the appearance of a turban. The second piece of gauze covers the borders of the first and also serves to fill up the depressions in the face when the mask is applied closely.

Dropper.—A dropper may be improvised from an ordinary bottle, cork, and a wick made of cotton or gauze, by cutting two grooves in the cork—one for the wick and one for the entrance of air. But the best dropper I have ever used is the Rohrig. It is equally suitable for ether or chloroform; the number of drops per minute can instantly be regulated by shifting a small lever with one finger; and it is a very economical instrument.

First Stage. First Step.—Take the inhaler in your left hand and hold it about three inches from the patient's face. In your right hand hold the dropper with its point about an inch from the mask—if held too far away ether will spray through the mask, much to the patient's discomfort. Allow the ether to flow at the rate of 80 to 100 drops to the minute and reassure the patient by explaining to him that while the odor of the drug is not very agreeable, still it will do him no harm; that soon he will become accustomed to it; that the more he tries to go to sleep the less ether will be required; that it will be given drop by drop

with plenty of air; that it is perfectly safe and he need have no fears; that no operative work will be done until he is asleep; direct him to breathe naturally instead of telling him to breathe deeply, as is so often done. Tell him all he has to do is to go to sleep.

After this half-minute talk lower the mask an inch and in fifteen or twenty seconds lower it a little more. If the patient has a feeling of strangling, coughs or turns away from the mask, raise it a little until he breathes freely two or three times, then lower it as far as you raised it. Leave it there for a few inspirations and then lower it further, but if at any time the patient shows intolerance elevate it as you will also do if he requests it. In this manner feel your way along, lowering the mask little by little until it comes to rest upon the patient's face. You will consume three to five minutes in accomplishing this much; sometimes a little longer.

Second Step.—Don't be in a hurry. This is a critical time, not dangerous to life, but very dangerous to the success of your undertaking. Give the patient all the time he needs and you will be successful. Afterward he will be grateful to you for having shown him consideration. (There are many fine points in the art of anesthesia beside merely dragging the patient through without killing him).

With the mask resting on his face and ether dropping 100 to the minute the patient feels the effect of the drug more and more with each inspiration. He can talk and answer questions, though confusedly. He has increasing hallucinations, maybe of all the five senses. Upon these he bases delusions, the character of which is greatly influenced by external stimuli. Touching a sore place or even so much as laying one's hand on him may cause him to offer resistance, and he is amenable to mental suggestion.

Gently remove the pillow, raise up the jaw, watch the respiration, pulse, pupils, and color, and as breathing grows deeper with relaxation more evident, increase the rate of flow to 250 or 300, or 500 to 800—as may be necessary—and very soon complete anesthesia will be reached. But don't touch the cornea to find out.

The patient is now in the second or operative stage and the ether should be dropped back to 60 to the minute, but promptly worked up to the rate necessary to maintain anesthesia—which rate can be determined in each case only by actual trial.

As the operation proceeds the anesthetic can and should be withdrawn at times and resumed only upon signs of returning consciousness. The point is to find out not *how much* he can take but *how little*, and one of the most valuable guides to this is the *ocular index*, which I shall describe fully later on.

TIME AND AMOUNTS

Ether. First Stage.—During the latter part of the first step and the early part of the second step are when most people meet with difficulties in giving ether, and call for the chloroform bottle. It all comes about through trying to hurry matters. Nothing is gained by it; in fact time

is lost. If you will gain the patient's confidence, then go at him gently; beginning with a small and highly dilute dose; allowing the patient and his mucous membranes to become accustomed to the pungency of the drug; advancing a little or receding, as seems advisable; there are very few people who will not go to sleep as quietly under ether as they would under chloroform.

This stage will require from 6 to 10 minutes. In my series the shortest time was 4 minutes; longest, 20; average $8\frac{1}{2}$. It will require from 2 to 4 ounces. The smallest in my series was 6 drams; largest, 6 ounces; average, 2.7 ounces.

Alcoholics are included in these figures, and of course they are notoriously resistant to any anesthetic. Frequently they will require a large amount and it must be more concentrated, at least for a time. This is done by throwing an extra covering (four thicknesses) of gauze over the mask. I have also found that robust male subjects from 18 to 25 years old are, many of them, quite resistant. The youngest subject I have etherized was 6 years of age; oldest, 84 years; average age in 100 consecutive cases, 29.5 years.

Chloroform. First Stage.—The plan of giving chloroform is quite different. A smaller mask may be used and it is covered with only one layer of stockinette. The patient does not, as a rule, need to be coaxed along quite so much as with ether. An anesthesia with ether is measured in ounces while with chloroform it is measured in drams. So the latter is dropped a great deal slower and the patient goes to sleep with a very much less amount, and in a shorter time. It should always be proceeded with extremely cautiously, especially in infants. The quieting effect of the very first drop in an infant ought to convince one of the potency of the drug.

The amount required for this stage of chloroform will vary from .5 to 2 drams. In my series the smallest was 10 drops; largest, 2.5 drams; average, 1.3 drams. This average includes all ages and all conditions. Many children can be fully anesthetized with less than .5 dram.

The time required will be from 2 to 6 minutes. The shortest was 1 minute; longest, 15; average, 5. This average can be reduced, but it isn't safe and it isn't necessary. The youngest subject was 8 days old; oldest, 74 years; average age in 100 consecutive cases, 21.5 years.

ETHER OR CHLOROFORM

Second Stage.—When complete anesthesia is reached the second stage begins, and as stated before, the anesthetic is given in smaller amounts—the exact amount having to be determined in each case.

The longer the operation the less anesthetic will be required, proportionately; that is to say, the amount required will be in inverse ratio to the length of the operation. Of course one will meet with exceptions to this rule.

TOTAL AMOUNTS AND TIME

The full amount of anesthetic required for the first and second stages depends upon several factors: 1. amount required for first stage: 2.

amount required for second stage; 3. dilution; 4. atmospheric conditions; 5. kind of dropper; 6. character of operation; 7. time of beginning operation; 8. length of operation and speed of operator.

1. This has already been commented upon. 2. The amount for the second state will vary normally with different subjects, depending upon their susceptibility; some will require three or four times as much as others. 3. If the mask is not properly made or does not fit well down over the face the patient will get too much air. It will be found in some cases that the anesthetic will have to be made more concentrated by the use of an extra gauze cover. 4. I have made no observations as to the effects of temperature or barometric pressure but they, of course, influence evaporation. 5. A homemade dropper may give too large a drop and flow too rapidly. A Rohrig dropper running at the rate of 100 drops to the minute will discharge a dram of ether in about 200 drops; of chloroform in about 240. As the rate of flow is controlled by a tapering needle point, the faster the flow the larger the drop, hence fewer of them to the dram. 6. The anesthetist should be thoroughly familiar with the technic of all operations so that he shall give only so much anesthetic as may be required to keep the patient free from pain and properly relaxed. It is neither necessary nor desirable to keep up a continuous administration of the drug. Frequently it may be withdrawn for 5, 10, 15 minutes or more at a time during parts of many operations, and nearly always before an operation is finished—all the stitches placed. For example: In an appendectomy, after the incision is made, as a rule it can be used quite sparingly. However, in this, as in all operations, especially abdominal, the patient must not be allowed to recover sufficiently to start retching. Very often a number of operations are done at one sitting, as for instance; dilatation and curettage, trachelorrhaphy, perineorrhaphy, and removal of hemorrhoids. The dilatation of the os occurs during the first part of the work; the dilatation of the sphincter ani during the last part. Both require complete anesthesia. The in-between work is done with less, but the anal work is anticipated by increasing the amount for a few inspirations, bringing the patient to the proper stage. Then after the sphincter ani is dilated the anesthetic is withdrawn permanently, as in a long series of operations such as this, it is probable that no more will be needed for the few minutes required to remove the hemorrhoids.

The anesthetist must also understand what reflex manifestations to expect. In operations on the gall-bladder or other parts in the vicinity of the diaphragm the patient will grunt or moan or breathe irregularly. Dilating a sphincter will partially arouse the patient, perhaps causing him to gasp or his pupils may dilate. All such signs must be understood so that one may differentiate between profound anesthesia and returning consciousness.

7. Time of beginning operation. By this I mean beginning an operation before the patient is quite ready. It will prolong the first stage indefinitely, and as relatively more anesthetic is required for the first than for the second, the total amount used will be greater than it would

have been had the operation been postponed a minute or two. There are also elements of danger in this. It favors shock; and if the patient suffers pain he may hold his breath, then inhale very deeply, getting a dose with one breath that should have been distributed over several inspirations. This is especially dangerous with chloroform.

8. The longer the operation of course the more anesthetic will be required. A speedy operation is not always the best and safest one. All diseased conditions must be rectified so far as possible, whether it takes three minutes or three hours; otherwise the patient might better have been left alone. When somebody devises a practical way of closing wounds quickly, the time of many operations will be reduced 25 to 50 per cent.

The smallest total amount of ether used in any one operation was 1 ounce in 15 minutes; the largest 20 ounces in 83 minutes; average amount in 100 consecutive cases, 7 ounces in an average time of 63.5 minutes.

The smallest total amount of chloroform (per minute) in any case was 5 c.c. in 30 minutes to a child 19 months old; largest amount 2.5 ounces in 117 minutes; average in 100 consecutive cases, 5.7 drams in an average time of 38 minutes. The longest time ether was administered was 201 minutes, chloroform, 153 minutes. These figures do not mean that ether was given continuously for 201 minutes, nor chloroform continuously for 153 minutes. They represent the time from the beginning of the anesthetic until it was discontinued permanently. As already stated, in many operations the anesthetic is left off for long periods and resumed in anticipation of work ahead; and usually it is left off some time before the operation is quite complete.

Temperature.—An elevated temperature does not contra-indicate anesthesia, but one should hesitate about anesthetizing a patient with a very low temperature as the anesthetic will send it still lower. Also shock, hemorrhage, etc., must always be considered.

Pulse.—For a long time I kept a record of the pulse in both stages of anesthesia and I found that a rapid pulse with no other symptoms that could be considered alarming, didn't mean anything serious. In about 100 anesthetics, with temperatures ranging from 98.2 to 101, the pulse in the beginning ran all the way from 90 to 120, 125, 130, 135, or even faster, due to nervous excitement, and in many cases there was irregular rhythm. From fear alone many patients are pale and cold and some are more or less livid, due to vasomotor disturbance. Sometimes this nervous condition is carried well over into the second stage, less often clear through it, giving a rapid pulse, but the rhythm becomes regular.

This state of the pulse, with the other signs as they should be, is not alarming. It can be slowed down with more anesthetic, but unless I think the patient really needs more, in anticipation of the work yet to be done, or because he feels some sensation, or is not properly relaxed, or for some other good reason, I do not push the anesthetic just for the sake of slowing down the pulse, except to keep it within bounds.

In exceptional cases I have noted a pulse of 120 carried clear through an operation while at the same time the patient was properly relaxed, unconscious of pain, breathing quietly, pupils contracted, color good. All signs, in fact, with the exception of the pulse just as they should be. This is purely a reflex disturbance brought about by trauma. It is liable to occur more especially in cases in which the operation has been started before the patient was quite ready. In any case the cause of a rapid pulse must be fully investigated. Nothing should be taken for granted. It is, after all, the quality of the pulse more than its rate that gives us real concern.

Respiration.—This is the vital thing to be watched. In more than 700 anesthetics I never knew the heart to cease beating, but several times respiration has stopped, once under chloroform for a time that seemed much longer than it really was. In all cases withdrawing the anesthetic, lowering the head, making traction on the tongue, and performing artificial respiration, restored the breathing quite promptly and the operation proceeded.

The experienced anesthetist develops a keen sense of the respiratory action of each patient sleeping under his care. No matter what he may be doing at the moment his eye or ear immediately detects a missing respiration. There are several causes for arrested breathing. One is the patient has an overdose; on the other hand he may not have enough and is holding his breath. Or the tongue may drop back and obstruct the breathing. In any event this warning must be heeded with all haste.

Color.—With ether 83 per cent. were flushed; 7 per cent. pale; 10 per cent. cyanosed. With chloroform 75 per cent. were pink; 14 per cent. pale; 10 per cent. cyanosed.

Atropin helps to flush. Cyanosis will be greatly relieved by keeping the patient's tongue well up and getting rid of mucus. Holding up the jaw becomes tiresome and it will be found very convenient to turn the patient's head to one side and keep it there. This helps to hold up the tongue, and if the head is lowered it allows mucus to collect in the buccal cavity where it will drain away or can be mopped out. But turning the head to one side or lifting the jaw upward and forward cannot be depended upon always to disengage the tongue. The tongue forceps may have to be used. After the tongue is drawn out, if it is desired to keep it out, the forceps should be taken off and the tongue held in the fingers with a piece of gauze. After a few minutes the tongue will become dry and the gauze will adhere to it, thus acting as a plug to hold the tongue outside the mouth, giving the anesthetist a hand free to use elsewhere.

Pupils.—Under complete anesthesia the pupils are slightly contracted. If they dilate it is a sign of either too much anesthetic or not enough. In many cases the pupils will dilate if the patient is conscious of any pain. In 350 consecutive anesthetics there were fifteen in which the pupils were more or less dilated, but from the other signs it was evidently

a reflex disturbance due to trauma. In a few cases one pupil was dilated and the other contracted.

Mucus.—Mucus may be very troublesome with ether, but there are two ways whereby a hypersecretion can be largely avoided. First: Giving a hypodermic of morphin and atropin prior to operation; second: *Proceeding slowly* with the anesthetic, never crowding the patient.

In a series of 275 ether anesthetics there were 44 in which mucus was secreted in slight to moderate amounts, and in a number of these it need not have occurred. There were five others in which mucus was so troublesome that ether was discontinued and chloroform substituted. There are some people whose respiratory tracts are so sensitive to ether, or in whom a slight cold has been disregarded, that there will be a hypersecretion no matter what precautions are taken. In 100 chloroform anesthetics there were two instances of hypersecretion.

Resistance.—Under the closed or cone method of administering either chloroform or ether there is a great deal of resistance; more especially with ether. It is the rule. It is manifested in various ways. Talkativeness, hilarity, emotionalism, combativeness, or convulsions. More often than not there will be a combination of these. The open or drop method changes this; resistance being the exception.

Morphin and Atropin.—We have found it good practice to give a hypodermic of morphin and atropin before anesthesia. We have given it in 90 per cent. of cases and have never seen any ill effects from it. Quite to the contrary, we find that it has a very tranquilizing effect upon the nervous system; the heart and respiration are supported; it steadies the vaso-motors; guards against shock; less anesthetic is required; fewer patients perspire freely; there is less post-operative pain and restlessness; and it certainly reduces to a minimum the secretion of mucus and saliva which not only interfere with the anesthesia but, when swallowed in large amounts, are so often the cause of post-operative vomiting.

An argument sometimes urged against morphin is that because it is a myotic the pupils will not dilate when the danger point is reached. I have had no experience with morphin alone; we always combine it with atropin, and this combination will *not* prevent the pupils from acting just as they would had these drugs not been given.

The Ocular Index.—When the first stage of anesthesia has been accomplished we must slow up and hold the patient there safely, allowing neither (a) the anesthesia to become any more profound, nor (b) the patient to regain consciousness to any extent. In other words, we must find a safe middle-ground; learning just the right amount for our patient, give that much and no more. As a matter of course the right amounts for different individuals will vary within wide limits.

What signs have we to keep us within proper bounds?

On the one hand we have danger signals from the pupils, respiration, pulse, and color; on the other hand signs of returning consciousness *from the very same sources*. In addition we have signs of returning consciousness shown by various muscular actions. How shall we interpret these different signals?

Let us arbitrarily divide anesthesia into *partial*, *complete*, and *profound*. There are three very important points concerning the pupils that must always be kept in mind.

1. Under *profound and dangerous* anesthesia the pupils are dilated. So we must never venture that far; we must keep just as far away from it as possible and still have our patient properly anesthetized.

2. Under *complete* anesthesia the pupils are contracted. But if we keep dropping on the anesthetic regardlessly we may very easily overstep the bounds of safety. Yet, fearing that the pupils may dilate, we may not give enough anesthetic and thus go too far the other way.

3. Under *partial* anesthesia (a) the pupils may be contracted, or (b) they may *dilate* from reflex irritation due to trauma, which latter event frightens the novice into believing that his patient is about to die, when, in reality, he is about to wake up.

The observation of the pupils as well as all other signs should be employed to inform us how to keep our patient *just beyond the borderline of sensibility* and not for the purpose of telling us how nearly death's door he is.

Besides the action of the pupils the early signs of returning sensibility are twitching, or may be rigidity, of the facial or other muscles, "fussy" breathing (especially expiratory), increased pulse rate, more pronounced apex beat, attempts at swallowing, rigid tongue, moaning, hiccough, or retching. Any one or a number of these may tell us that our patient is "coming to."

Aside from these I wish to call particular attention to the behavior of the extra-ocular muscles as an index of the degree of anesthesia. So far as I am concerned the observation of this sign is original. I have never heard it spoken of nor seen it mentioned in any literature.

Through a careful study of the action of the eyeballs in hundreds of anesthetics observation has taught me that: *Under complete anesthesia the eyeballs are motionless, but under lighter degrees they can and generally do move, and as the patient approaches consciousness the movement becomes more pronounced.*

In the majority of instances the internal and external recti are the muscles taking part in this movement, which may be very spasmodic—a mere jerk or "glance"; a nystagmus so slight, in fact, as to be very easily overlooked unless watched for carefully. Instead of being a sudden movement it may be a very slow one through a considerable arc. In still other cases the action will be seen as a convergent or a divergent squint; or the superior and inferior recti will pull the globes up or down; or, less often, the oblique muscles act.

The correct way to look for this sign is as follows: Leave off the anesthetic. Place the tip of your index finger above one upper eyelid and the tip of your little finger above the other and pull the lids wide open. Watch *both* eyeballs intently and very soon you will observe one of the actions as described. For some reason the action is more readily appreciated if both eyeballs are watched. In fact one may fail to see it otherwise. In a short time, as the patient approaches consciousness,

(especially if there be any trauma), you will observe that the movement of the eyeballs becomes more pronounced and presently the patient gives other signs of sensibility, such as twitching of one or more of the facial muscles, muscular rigidity, moving a finger, noisy breathing (especially buccal), quickened pulse, retching, and so on.

Now resume the anesthetic carefully and deliberately and you can carry your patient back to any desired degree and hold him there *ad libitum*.

I do not wish to convey the idea that all one has to do is to drop on the anesthetic and watch the eyeballs. It isn't as simple as that. There is a small percentage of cases in which the eyeballs do not give this signal before other signs of returning consciousness are manifested. Moreover, one should never watch any one sign to the exclusion of all others. On the one hand he must be on the alert for danger signals and on the other for signs of returning sensibility. But I am laying particular stress upon this sign because it has been of such great value to me in my own work. It tells me oftener than does anything else how to keep my patient on safe ground and administer to him a minimum amount of anesthetic. And I believe others will find it equally as useful if they will study it, learn to interpret it correctly and at the same time never lose sight of any other symptoms that should be watched. I can say that I have never seen the pupils dilate nor the breathing stop *from an overdose* when the eyeballs were moving, and I make it a rule to stop just short of keeping them motionless. If I find one of the exceptional cases, already alluded to, I still make use of this ocular sign by "trying out" the patient and finding what other signal he will give first. If he will not give me the *ocular index* promptly he must give me some other sign that I can rely upon.

Festina lente is an excellent maxim to observe. It takes just so many minutes to anesthetize a patient and do it correctly. Some will require more time than others and they should be given all the time they need. Don't allow any one to hurry you and don't hurry your patient. Always be on the safe side. The idiosyncrasy one may have for chloroform or ether is an absolutely unknown quantity. There is no possible way of determining beforehand how well any one will tolerate these drugs, and the only safe plan is to approach the thousandth anesthesia with the same care and thoughtfulness as you did the first one—may be more. Any serious effects from chloroform are most likely to occur within the first few minutes. If you crowd your patient with it he may get an overdose very quickly and stop breathing. If you crowd him with ether you are simply going back to the days of barbarism, when we used an Allis inhaler and poured on ether by the dram—and the patient secreted mucus and saliva in like amounts. No wonder he had a "stage of excitement," shrieked, tried to swim out, and required the services of three or four strong-arm men. Such scenes practically never occur under the drop method.

I have never seen any one succumb to an anesthetic and—(having knocked on wood)—I hope I may never. While there is no way of proving it, still I believe that many deaths have been due to carelessness and

inexperience, or the patient has not been properly prepared—or both; and the death has been charged up to the anesthetic because it couldn't defend itself. I have a higher regard for ether than I have for chloroform but I respect both. I believe any one who has given very many anesthetics will bear me out in the statement that often it is plain to be seen how death might occur should the anesthetist do the wrong thing at the wrong time. Which is just another way of saying that the anesthesia is a very necessary, a very important, and a very particular part of every operation.

What deters most people who shrink from an operation—often of a minor nature? Is it fear of the knife or fear of the anesthetic?

VENEREAL DISEASES IN CHILDREN *

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CHICAGO

The venereal diseases that affect children are syphilis and gonorrhea. Syphilis is an hereditary disease, manifesting itself in various and sometimes horrible forms; it may also be acquired, but such instances are comparatively rare. Gonorrhea is seen mostly as a vulvovaginitis in little girls; it may occur in boys as a urethritis, and in both sexes as a conjunctivitis, or inflammation of the eyelids, which is responsible for about 20,000 cases of blindness in the United States.

It is not my purpose to expatiate on the nature of these diseases from a medical point of view, but from a sociologic standpoint to consider the question of justice to those afflicted and the protection of hundreds of children exposed to infection.

Hereditary syphilis we are told by Filatov¹ is responsible for a little over 1 per cent. of the mortality in children under 1 year of age.

"The syphilitic descendant," says Finkelstein,² "shows a specific loss of resistance, a specific debility on the basis of which deleterious factors that are readily overcome by those not subject to syphilis, produce unusual effects."

Luetic children suffer from general feebleness, deformities, retarded growth, and succumb readily to disease. They are often below par mentally, either as a part of their general imperfect development, or because their physical defects retard their intellectual progress.

To prevent syphilis in children, with all its horrible manifestations and consequences, is, of course, to go back to the education of the parents, and of boys and girls before they become parents, so ably presented by Dr. Yarros and Dean Sumner last evening.

* Read before the joint meeting of the Chicago Medical Society and the Chicago Society of Social Hygiene, April 4, 1912.

1. Filatov: Semiology and Diagnosis of Diseases of Children.

2. Finkelstein: Modern Clinical Medicine.

But the number of congenital-syphilitic children who are suffering from any active manifestations of the disease that would necessitate their isolation from others, is insignificant when compared with gonorrhea. The danger of infecting others is not so great either, and the curative treatment of active syphilitic disturbances is now most successfully and speedily accomplished.

But with gonorrhea in children we are still waging an unsuccessful battle. In fact the disease seems to be spreading with alarming rapidity.

Gonorrhea is so insidious in its onset and frequently so benign in its course that it is often only discovered by accident. The infection may exist for months and produce considerable damage without any perceptible annoyance to the child.

Gonorrheal vulvovaginitis, or urogenital blennorrhea as some authors now choose to call it, is an inflammation of the vulva and vagina in little girls, accompanied by more or less discharge of a purulent or semi-purulent character, which on microscopic examination shows pus cells and the germs of the diseases, called gonococci.

Sometimes the child is distressed by the inflammation or discharge and complains of distinct symptoms, but it is surprising to see what severe infections exist unnoticed by the little patient or even by her care-takers.

Gonorrhea is not an hereditary disease like syphilis, whose taint is in the child at birth: gonorrhea is acquired by contact. Contaminated bedding, towels, sponges, toilet seats, bath tubs, the fingers of the nurse, rectal thermometers, underwear, etc., are the most frequent means of communicating the disease.

It is perhaps from soiled linen that most children are infected in their own homes, which was probably the case in the following instance:

Two years ago a man with a wife and four children became infected with gonorrhea. A few months later his wife gave birth to their fifth child. The child had an ophthalmia neonatorum, or gonorrheal infection of the eyes. The mother took the child to a dispensary for treatment. The social service nurse visited the home to investigate the conditions. She found that not only were the mother and the baby suffering from the disease, but the three little daughters had gonorrheal vulvovaginitis, and the little boy had a specific urethritis.

The father, having lost interest in the family he infected, deserted them. The little boy and the baby were treated at the dispensary. The three little girls were taken to the Frances Juvenile Home, where they were treated and their schooling continued. The mother was treated at my dispensary until the condition cleared up. Within a few months, however, she had to submit to a major operation for the removal of the tubes, which had become involved.

We know that gonorrhea is not purely a local infection, but that it can poison the whole system. Only recently a woman died in this city of a gonorrheal pleurisy, and one of my professional friends has observed several cases of gonorrheal insanity in his patients, who return to normal when the disease disappears.

A woman with this disease at the time of labor is highly susceptible to a generalized infection—a gonotoxemia, in other words—and that is what happened to the mother above referred to. She became yellow,

irritable, feeble, lacked ambition and energy, and was unable to do the usual amount of work. She had been an ideal housekeeper whose home was immaculately clean, but after this calamity came into the house, evidences of neglect were plainly visible on all sides. It required a number of months after her operation to restore her to good health.

A drop of gonorrheal pus on the toilet seat in a public school can start a wide-spread epidemic. In institutions they are not uncommon. Holt³ reports four epidemics in the Babies' Hospital of New York between 1899 and 1904, involving 273 children. In routine examinations made by him in various institutions he discovered it, frequently in a mild form, in from 2 to 10 per cent. of the inmates.

The children of the tenements are those most frequently seen in hospital and dispensary practice, but the little daughters of the rich are by no means spared, and one is occasionally utterly unable to trace the source of infection in a child surrounded by every protection and comfort money can procure.

It is indeed a sad commentary on our civilization that so many little girls are infected through attacks on them by vicious men. It is a matter of common knowledge that a deep-rooted superstition prevails among the foreign classes that a man who has contracted gonorrhea can cure himself by association with a virgin. These men invariably select for their victims children under 10 or 12 years of age, whom they can intimidate and keep silent by threats, and where there is no possibility of pregnancy to lead to their discovery.

As assistant city physician I have examined fifty-three girls during the past six months in connection with crimes of this character. These, of course, are court cases, in which the offender is being prosecuted, and constitute but a very small number of such crimes committed annually. In a recent trial a man was sentenced to forty years in the penitentiary.

But there are hundreds of cases which are never prosecuted because the parents shrink from the notoriety, and the ordeal for the little girl is one of the most revolting experiences one can possibly imagine.

Of the fifty-three cases above referred to, thirteen were 10 years of age and under, of whom nine (or 70 per cent.) were infected with gonorrhea.

Some of these infected children were taken to the Cook County Hospital, the only institution that will accept these unfortunate little ones in the acute stage of the disease; but there were times last winter when the children's venereal ward at the county hospital was so crowded that three children had to occupy one bed, and it was impossible to admit more.

The children's venereal ward at the County Hospital was primarily set aside for the isolation of children with a medical or surgical disorder *plus* a gonorrheal infection from children with some medical or surgical disease *minus* a gonorrheal infection. More than this the hospital cannot

3. Holt: Diseases of Infancy and Childhood.

reasonably be expected to do. It is unjust and unfair, moreover, to children who are able-bodied and normal in every other respect, to keep them locked up for weeks or months, with sick and suffering children — patients with typhoid fever, tuberculosis, bronchopneumonia, burns or broken bones — without opportunity to play or study or occupy their time.

In connection with the division of eugenics at the child welfare exhibit held in this city in 1911, Dr. Grace Meigs and myself visited twelve different hospitals and dispensaries and discovered that over 500 cases of gonorrheal vulvovaginitis had passed through those institutions in the twelve months of 1910.

For the past two years I have personally gathered the statistics at the Cook County Hospital.

In the year 1910 the Children's Annex, as this ward is called at the County Hospital, cared for 330 children:

Boys	37
Girls	293
Total	330
Over six years old	27 per cent.
Under six years old	73 per cent.
The cases were divided as follows:	
Gonorrheal vulvovaginitis	252
Gonorrheal conjunctivitis	43
Gonorrheal urethritis	2
Congenital syphilis	33
Total	330

Of the 252 cases of gonorrheal vulvovaginitis, 116, or 46 per cent., were admitted solely for the local infection, and the remainder, 136, or 54 per cent., were children brought to the hospital for treatment of some medical or surgical disorder, and it was discovered on examination at the time of entrance that the children had gonorrheal vulvovaginitis in addition.

Nearly half of these girls then were able-bodied little tots spending their days among bedridden, sick and suffering children. Many of them were of school age, and their schooling was, of course, neglected.

In the year 1911 the County Hospital took care of 232 children suffering from syphilis or gonorrhea:

Boys	30
Girls	196
Babies (sex not mentioned)	6
Total	232

The cases were divided as follows:

Gonorrheal vulvovaginitis only	105
Gonorrheal vulvovaginitis plus some medical or surgical disease.....	57
Gonorrheal vulvovaginitis and syphilis	1
Gonorrheal vulvovaginitis and gonorrheal conjunctivitis	3
Gonorrheal urethritis	6

Gonorrheal conjunctivitis	31
Gonorrheal conjunctivitis and syphilis	2
Congenital syphilis	27
Total	232

There were 105 little girls with gonorrheal vulvovaginitis only, or 63 per cent., and sixty-one little girls with the local infection in addition to some other disorder.

Of these 166 little girls there were

Over six years old	55 or 33 per cent.
Under six years old	111 or 67 per cent.

Of all the children there were

Over six years old	60 or 26 per cent.
Under six years old	172 or 74 per cent.

The ward I believe was quarantined a considerable time on account of chicken-pox or measles, and for that reason the total number is smaller than the previous year, even though its capacity was exceeded at times.

The county hospital cannot take care of the large number of infected children that come to our notice and do them justice. It is not the function of a general hospital such as the County. The truth is that most of the little girls are taken out by their parents after they have been treated a few days or a few weeks, which gives parents a false sense of security, although they are always told that the child should continue to receive medical attention. Very little good, therefore, is accomplished.

The disease is becoming alarmingly prevalent, as before stated, and until we adopt proper measures for the care of the unfortunate little ones already afflicted, we can hope for no permanent improvement in the situation, which, to say the least, is exceedingly serious.

The thought uppermost in the mind of the average person is to isolate the infected child in order to protect other little innocents, but we deceive ourselves if we think we are doing so by sending them to a general hospital.

The gross injustice to the infected child appeals strongly to my sympathies: she is either shut in with sick and bedridden children for months, without play, study or work, or she receives no medical attention whatsoever and must suffer perhaps for the greater part of her adult years from the consequences of such neglect.

The results of neglect, the complications and sequelæ of gonorrheal vulvovaginitis are matters deserving our most serious thought and active attention.

If hundreds of helpless and innocent little girls must suffer for the sins of society, they surely should be cared for as conscientiously and faithfully as we know how, so as to mitigate their immediate distress and reduce to a minimum the direful consequences of the affliction.

Joint pains, "gonorrheal rheumatism," is a common complication in children, and numerous cases are cited by various observers: even pus has been taken from the joints and tendon sheaths of children under

5 years old. It is estimated that 1 per cent. of children with gonorrheal vulvovaginitis suffer from joint troubles.

The involvement of the tubes and ovaries is perhaps more frequent than we suppose, which, of course, means sterility and pelvic pain later. Marx⁴ performed autopsies on five little girls between 7 and 9 years of age, who had been infected with gonorrhea, and found pus tubes in all of them. Koplik⁵ mentions sixteen cases of peritonitis in his experience, and Cotton tells us that 20 per cent. of these cases are fatal.

The diagnosis of gonorrheal peritonitis and acute appendicitis in little girls sometimes becomes an extremely difficult problem for the physician, and is a particularly grave situation, as the treatment of the two affections is radically different, and both demand immediate attention.

"In cases of long duration the general health suffers, the appetite fails, the child has an irritable temper, loses its freshness and becomes pale" (Langstein⁶). At puberty a great deal of pain and suffering may result from the pathologic changes produced by an infection in early childhood, which may continue through life.

Cotton⁷ states it very clearly and effectively, when he says: "The far-reaching effects of gonorrheal infection, however, are seen in its tendency to recrudescence on slight provocation, sterilizing the reproductive organs and leaving a heritage of . . . morbidity which ruins mature life."

Within the last few years some very gratifying results have been obtained in the treatment of this disease with vaccine.

Dr. B. Wallace Hamilton⁸ has made a very careful study of 344 cases treated by him at the Vanderbilt Clinic, and found the active time of treatment with vaccine in eighty-four cases to average 1.7 months, as against an average of 10.1 months in 260 cases treated by irrigations. Badly neglected cases require much longer.

In Chicago, Churchill and Soper⁹ have given this subject much thought and study and the result of their investigations has been that injections of gonococcus vaccine shorten the time of treatment. These conclusions were also arrived at by Hamilton and Cooke.¹⁰ At the Frances Juvenile Home we have had very satisfactory results with vaccine, but we do not admit acute cases, so are not competent to speak on that point.

The Frances Juvenile Home was founded in 1909 for the purpose of treating, and educating while under treatment, girls who have passed the acute stage of gonorrheal vulvovaginitis and children who have hereditary syphilis. A schoolroom and a teacher are provided by the Board of Education, and older children receive practical instruction in domestic science. The cases of gonorrheal vulvovaginitis are not dismissed until six successive smears taken a week apart are negative and the local condition is satisfactory, during which time they receive no vaccine.

The Home is supported largely by Chicago's generous citizens, and though our limited facilities enable us to care for only a small number,

4. Marx: *Med. Rec.*, Jan. 11, 1896.

5. Koplik: *Diseases of Infancy and Childhood*.

6. Langstein: *Encyc. of Dis. of Children*.

7. Cotton: *Diseases of Infancy and Childhood*.

8. Hamilton: *Jour. Am. Med. Assn.*, April 9, 1910, liv, 1196.

9. Churchill and Soper: *Jour. Am. Med. Assn.*, li, 16.

10. Hamilton and Cooke: *Jour. Infect. Dis.*, v, 1908.

it has proved its worth many times over in the care of some of the unfortunate cases which have been brought to us—children without parents, home or friends, rejected by every other institution save the County Infirmary at Dunning.

We feel, however, that to be of real service to the community and the state, and to save hundreds of little girls from the future consequences of this terrible disease, *we* or *somebody* should do a larger work.

"Gonorrheal infection is more frequent than generally suspected," says Cautley.¹¹ "more dangerous than commonly realized, and sometimes appalling in its results."

"Gonorrheal infection will undoubtedly soon receive its proper recognition as one of the most virulent and dangerous of the infective diseases and secure the necessary legislation for the protection of the innocent that is now accorded to some other common but less formidable disorders" (Cotton).

A place should be provided in justice to these little girls where they can be treated carefully from the onset of the disease, surrounded by a homelike environment, with opportunity to play and to continue their schooling during the several months required for their treatment. And eventually the work should be assumed by the city, county, or state as its obligation to its future women and citizens.

I desire to express my thanks to Dr. William Allen Pusey, Attending Physician to the Cook County Hospital, for his courtesy in permitting me to compile the above statistics.

Reliance Building.

OBSCURE TUBERCULOSIS *

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CHICAGO

The early diagnosis of tuberculosis is one of the most important subjects in the whole realm of the practice of medicine. This statement is supported by the following facts: (1) the great prevalence of the disease; (2) if the applied treatment is to do any good its efficiency is in direct ratio with the early stages of the disease; (3) the difficulty in making an early diagnosis. It is with this third fact, the difficulty in making an early diagnosis, that we will deal; and I wish to call your attention more particularly to a certain class of these early cases, namely, the *obscure ones*, and present for your consideration some of the difficulties that confront us in making a diagnosis of this condition, and call your attention to the importance of making an early diagnosis if we are to succeed in our fight against tuberculosis.

This classification of obscure tuberculosis embraces, as I will hope to show you, a large number of hitherto overlooked cases. In its beginning the picture presented and the symptoms as given often suggest some other disease and for this reason mistakes are made. Tuberculosis begins so insidiously that the process of destruction may be going on for many

* Read at a meeting of the Chicago Medical Society, April 24, 1912.

11. Cautley: The Diseases of Infancy and Childhood.

years without our knowledge. This condition is frequently covered or masked by some other condition or disease that for the time presents more marked symptoms. We have, unfortunately, often been to blame for this, for have we not seen only the acute or prominent symptoms of some intercurrent disturbance and overlooked the deeper lesion? And will not the reason for this often be found in the fact that we are so apt to associate in our minds only the thought of "lung signs and symptoms" when making an examination and forget the many other structures and organs that may be the seat of a primary tubercular focus?

Will we ever get to the point where we can realize that negative chest findings do not mean freedom from tuberculosis? If the family physician, the internal clinician, will come to recognize his responsibility in this regard, at once a long step in the direction of correcting the evil will have been accomplished. Do you think that a physician has the right to say to a patient after failure to find tuberculosis by palpation, percussion, auscultation or a microscopic examination, that they are not tubercular? Yet this is often done.

Obscure tuberculosis connotes a condition presenting a chain of symptoms that do not suggest tuberculosis; but that shows a positive febrile reaction to the subcutaneous tuberculin test.

This expression is in common use: "The examination of the sputum will settle the question"; but this is not so, for there may be no sputum, and we may not be able to produce any, even; on the other hand, we may have profuse expectoration without the presence of the tubercle bacilli. To be sure, if we find them there can be no question; but have we the right to wait for their presence before making a diagnosis of tuberculosis? There is a tendency on the part of many physicians to place too great reliance on the examination of the sputum and correspondingly to neglect a thorough examination for the early signs and symptoms, and failing in this to make a tuberculin test.

It is at the post-mortem table and in the laboratory that we acquire a knowledge of the endless varieties presented by the tuberculous lesion in every stage of the disease, and nothing but a fairly accurate knowledge of these varieties can aid us in forming even a rough and often inaccurate idea of the possible conditions that may be compatible with the symptoms and physical signs. These physical signs and symptoms which we feel and hear have up to the present time constituted the essential basis of all systems of classification of pulmonary and other tuberculous infections; but mere degrees in the changes of shape, in the impairment of movement, in the vocal fremitus and resonance, in the changes of the percussion note, in the altered breath sounds, and in the varying character of the adventitious sounds signify much or little according to the skill with which we can translate the language of physical signs and symptoms into the objective conditions in the underlying tissues themselves. Physical signs and symptoms are often hard to interpret and leave plenty of scope for erroneous conjecture. This is not so with the tuberculin test.

Unless we have some clear ideas of the value of tuberculin as a diagnostic agent, we may go hopelessly astray in our diagnosis by means of

the physical signs and symptoms in the early stages of the disease; we hardly begin to study the clinical aspect and vagaries of tuberculosis until we use tuberculin for diagnostic purposes. A reaction to tuberculin always occurs when there is pathologic evidence of tuberculosis; though there may be an absence of the clinical evidence. If this great fact about tuberculin as a diagnostic agent in these obscure cases is realized and remembered, we cannot express in words the enormous gain that will have been made in the fight against this dread disease.

Research into the duration of tuberculosis is just beginning. In the past medical men have usually measured the duration of the disease by the period of mixed infection and to a very great extent this is still done. The correct duration of the disease, however, should be measured from the time of implantation, and this implies a long period of obscurity. Von Behring tells us in poetic language that "consumption is the last verse of the song which is first muttered in the cradle."

Tuberculosis exists long before it can be detected by physical signs and symptoms. The time between implantation and the time of demonstration by physical signs and symptoms may be many months and in some cases it is many years. It is during these early days of the disease that the cure will cost the least. We must discover it before the appearance of physical signs. It may be stated as a truism that according to current medical usage much is denominated disease which is in reality only an effect of the same, and that many coexisting organic disturbances in the same body are looked on as separate and independent disorders which on investigation are found to form a group of superficial manifestations which owe their origin to a common underlying cause — tuberculosis. That we may better understand this underlying cause as represented by this large class that I have described as obscure tuberculosis I will briefly give the history of a few cases taken from the clinic and my office records. The clinic cases were taken from the regular medical and nervous clinics.

CASE 1.—Miss A. A., aged 39 years, came into the medical clinic April 18, 1911, and gave the following history: Complained of nervousness and heaviness of the lower limbs, with sensation of cold and heat through the frontal region, with but slight headache. Slight dizziness and a peculiar sensation in the stomach, with nausea and vomiting not associated with eating, but seeming to come on after worry or excitement; appetite is poor, sleep is irregular and not restful; is tired all the time and lacks interest in any thing; extremities cold. Present complaint of about three years' duration; gives a history of rheumatic fever.

Examination.—The heart and lungs appeared to be normal, chest well developed; there was a slight scoliosis in the cervical region; urine negative.

The bitter tonics and bromids were prescribed and she seemed to improve for a short time, but this did not last. July 25, 1911, Dr. Bernard Fantus referred her to me for a tuberculin test. The symptomatology at this time was about the same as already given, the physical signs were negative, temperature 99, pulse 106, weight 120 pounds.

Blood examination showed: hemoglobin, 75 per cent.; color index, 80 per cent.; number of red cells, 4,088,000; white cells, 8,200; polymorphonuclear neutrophils, 75 per cent.; small lymphocytes, 18 per cent.; large lymphocytes, 5 per cent.; eosinophils, 1 per cent.; basophils, 1 per cent. She was given at 3 p. m., 1 mg. of old tuberculin subcutaneously. The next day her temperature at 8 a. m. was

97.4 F.: at 11 a. m. 98; at 1 p. m., 100; at 3 p. m., 100.2; at 9 p. m., 99.4; at 8 a. m. the next day temperature was 98; at noon it was 99; at 3 p. m., 98.6. Based on this positive febrile reaction to the tuberculin test a diagnosis of obscure tuberculosis was made.

Treatment.—The dietary prescription contained the regular diet, with the addition of eggs, milk, cream and butter, with bacon, and a generous amount of sweets, all in increasing amounts, governed by the condition of the digestion. She was urged to be out in the open as much as possible, and to sleep in a well-ventilated room on the second floor, with a rest period after her midday meal. She was given two treatments of tuberculin each week in gradually ascending doses.

Aug. 30, 1911: Pulse, 100; temperature at 8 a. m., was 98.2; at 2 p. m., 98.6; weight, 123 pounds; feels better and the appetite has improved.

Oct. 28, 1911: Pulse 92; temperature at 8 a. m. was 98.4; at 2 p. m., 99; weight, 125 pounds; sleeping better, feels stronger, the pains and aches are gone and she has had no nausea for three weeks.

Nov. 14, 1911: Pulse, 93; temperature at 8 a. m., 98.6; at 2 p. m., 98.6; weight, 127 pounds; the nervousness is much better, she sleeps well and feels well.

April 16, 1912: Pulse, 88; temperature at 8 a. m., 98.4; at 2 p. m., 98.8; weight, 126 pounds; she continues to improve. Blood examination showed hemoglobin, 89 per cent.; color index, 90 per cent.; number of red cells, 5,344,000; white cells, 8,400; polymorphonuclear neutrophils, 76 per cent.; small lymphocytes, 19 per cent.; large lymphocytes, 4 per cent.; transitionals, 1 per cent. This patient gives every indication that she is on the road to a complete recovery.

CASE 2.—Miss M. B., aged 18 years, complained of frontal and temporal headaches, coming on every afternoon; the eyes were negative; the appetite was poor; she had night sweats last spring for a short time; has lost some weight; feels tired all the time, feet and hands always cold; catches cold easily.

Examined at the clinic Oct. 12, 1911: Face was pale and anemic in appearance; the general examination did not show any abnormal findings of importance. Temperature, 99; pulse, 110; weight, 112 pounds. Blood examination showed hemoglobin 80 per cent.; color index, 72 per cent.; red cells, 3,188,000; white cells, 6,800; polymorphonuclear neutrophils, 58 per cent.; small lymphocytes, 21 per cent.; large lymphocytes, 20 per cent.; basophils, 1 per cent. She was tested with 0.5 mg. of old tuberculin given subcutaneously, and gave a reaction to temperature of 101 degrees, with an increase of the general malaise and headache.

Treatment.—She was given two injections of tuberculin each week, with forced diet, and urged to keep out in the fresh air as much as possible.

December 5, 11 a. m.: Temperature, 98.6; pulse 100; weight, 120 pounds; appetite and digestion are good; feels much stronger; does not get tired any more.

April 6, 1912: Temperature, 88.4; pulse, 92; weight, 119 pounds; there has been an improvement in her general condition; says she feels much better. Blood examination showed hemoglobin, 85 per cent.; color index, 90 per cent.; red cells, 4,500,000; white cells, 7,400; polymorphonuclear neutrophils, 64 per cent.; small lymphocytes, 28 per cent.; large lymphocytes, 8 per cent.; eosinophils, 2 per cent. This patient is now doing general house work without undue fatigue.

CASE 3.—Female, aged 20 years. Her father died on account of injury; her mother is very nervous, and one sister died of phthisis at the age of 18 years. Patient is very nervous; laughs and cries without motive; she is subject to frequent colds; has cold extremities; appetite is poor; weight varies. At this time, March 16, 1909, temperature, 97; pulse, 102; weight, 104 pounds. She has been taking bitter tonics and bromids for about one year without benefit; the physical signs were negative. She was tested with 4 mg. of old tuberculin and gave a positive febrile reaction.

Treatment.—Tuberculin, forced diet and plenty of fresh air. At the end of eleven months she weighed 117 pounds; she looked well and said that she felt well; she was going to college and doing the work without fatigue.

CASE 4.—Female, aged 29 years. Her father was an alcoholic; her mother died of phthisis at the age of 36 years. Patient is married and has one healthy child. She was examined June 4, 1910. Temperature, 98; pulse, 90 and irregular; weight, 132 pounds; she was weak and nervous, liable to frequent outbursts of anger, not able to sleep, continually complaining of cardialgia; she was tired and listless; appetite was fair, but she looked to be underfed.

Treatment the same as already outlined. At the end of one year she weighed 145 pounds, looked well and said that she felt better than she had for a number of years; was able to do her own housework and care for the 4-year-old boy.

CASE 5.—Male, aged 26 years; examined May 4, 1909; parents both living. He is the only child; gives a history of having a few indefinitely described fits during childhood. Had a troublesome cough, followed often by vomiting, vague nervous symptoms, with periods of depression and listlessness; would eat but little at these times; was too tired to work; his parents attributed this condition to laziness; they tried to interest him in his father's business without success. His temperature at 8 a. m. was 96; pulse, 72; weight, 133 pounds.

Physical Examination.—There was a retraction of both apices, with diminished resonance over the right upper lobe, with bronchial breathing. He was given a tuberculin test of 6 mg., and gave a temperature reaction to 103 degrees with a marked local reaction. As a result of the reaction he was confined to his bed for three days. At the end of one week he was feeling better and within six weeks he was feeling fine and looked like a new man.

The treatment carried out was as above outlined. At the end of eight months he stopped the treatments because he could not see any reason for continuing them, he felt so well. He was then weighing 156 pounds, and was in his father's store every day and interested in his work. The nervous symptoms had all disappeared.

Gathered from the clinical records of fifty-four cases of obscure tuberculosis treated, I wish to present the following data:

1. Obscure tuberculosis is a disease that involves the higher nervous centers. In a large per cent. of these cases nervousness constituted the most prominent symptom; usually, however, the nervousness was accompanied by tenderness to pressure in spots with a general neurasthenia. In some sleeplessness was very persistent; this was often accompanied by twitching and jerking of the extremities. The reflexes in these cases were not as exaggerated as we find them in cases having a true central lesion.

2. Innervation was very much below the normal; a large per cent. of them were listless, were not interested in their work or their health; they lacked ambition.

3. The dynamic force of the individual was below the normal, they were asthenic, they all had the tired feeling, they were deficient in physiologic energy.

4. Gastro-intestinal symptoms were present in a very large per cent. of these cases; most of them were indifferent to food; they had gastric distress, acidity and flatulency.

5. More than 50 per cent. of them were running a subnormal temperature; the morning temperature in some was as low as 96 to 97 degrees. In many this would occur for a few days at a time and then would become normal. In others the temperature would remain low until there was an improvement in their general condition. We have, I think, looked too long and hard for the febrile signs of tuberculosis and have overlooked the subnormal stage which precedes the febrile stage by many months.

6. Loss in weight formed a constant symptom; in some this was gradual, a few pounds each year; in others the loss had occurred within a few months. In some cases there was but little loss in weight but there was a soft and flabby condition of the muscles.

7. There was an increase in the pulse-rate ranging from ten to thirty beats per minute above the normal. In a few cases the blood-pressure was below the normal.

8. Pallor of the skin and mucous membranes was present in many; the pharynx and palate were the first to show this.

9. Sensitiveness to cold, cold extremities and the frequent catching of colds were the most common expressions heard when taking the histories.

10. Cough was present in less than 10 per cent. of these cases and tubercle bacilli were absent in all of them, though an attempt was made to free them by the use of potassium iodid. Blood examination showed a mild leukopenia in 10 per cent. Physical signs were negative in a large per cent. of these cases. Inspection showed a diminished expansion of one apex in 20 per cent.; in some of them this amounted only to a lagging on the one side. The supra- and infra-clavicular spaces were scaphoidal in some and showed no bulging on forced inspiration. Percussion revealed a retraction of one apex in 28 per cent. of the cases and a retraction of both apices in 20 per cent. with diminished resonance.

Oscultation.—There was harsh breathing in 26 per cent. and bronchial breathing in 20 per cent., with prolonged expiration in 32 per cent. and small crackling râles were present in 10 per cent.

Diagnosis.—The diagnosis of obscure tuberculosis was based on the presence of a febrile reaction following the subcutaneous administration of old tuberculin.

Treatment.—The treatment consisted in the use of old tuberculin and such diet and fresh air as their homes and station in life would permit. In these cases there was no other constructive medication. The diet was their ordinary diet plus a generous amount of milk, cream, butter, eggs and bacon where it was possible for them to be had. The fresh air was the best that the home could afford in the way of a well-ventilated bedroom. Most of these patients have been wage earners or housewives with their home duties. They have all continued their respective vocations soon after the treatment was begun; many of them could not and did not stop their work. The average duration of the treatment was one year.

Results.—There has been an improvement in every case treated, the weight increase has been from 5 to 25 pounds; they have all reached their normal weight, some going and staying above their usual weight. The first and most noticeable change in their symptoms was an improvement in their appetite; this was followed by an increase in weight; with this came improvement in the nervous symptoms; they began to sleep better and feel more rested in the morning. The "tired feeling" and innervation were supplanted by the "I am feeling fine," "I do not get tired like I used to," "I am always hungry." In other words, *the symptoms for*

which they sought relief were gone. I believe that my success in treating these cases has been due to tuberculin. First, by its use it has been possible to make an early diagnosis and second, its specific action on the tubercle bacilli.

In medicine as in surgery pioneers have often had to bear much unfair criticism. Experience is our greatest teacher. I do not know of any great authority who has used tuberculin, with the conditions and limitations as now generally accepted, who has found it wanting; neither have I seen any carefully compiled records that prove tuberculin to be either harmful or useless. The failures and tragedies associated with tuberculin are not the fault of tuberculin.

Failures may be the stepping stones to higher successes, and the failures of to-day are converted by increasing knowledge and experience into the successes of to-morrow.

32 North State Street.

DISCUSSION

Dr. B. Fantus: It was fortunate that we had this evening two papers dealing with the effects of the toxins of tuberculosis. Dr. Wiener's paper showed how they may produce tumors, and has taught us the lesson that hereafter we must not only employ the antisypilitic, but also the tuberculin treatment in the therapeutic test of tumors.

Dr. Metcalf's paper presents the medical aspect of the effects of the same poisons. It tells us that the symptoms produced by the poisons of the tubercle bacillus may closely resemble those of neurasthenia. The case he reported was a "typical" neurasthenic, and the reason I referred her to him for treatment at the dispensary of the College of Physicians and Surgeons was because she did not react to the usual treatment for neurasthenia; and another case had brought forcibly to my mind that tuberculosis is capable of producing symptoms of neurasthenia. This other case was that of a young man who for six months seemed to suffer from neurasthenia, and then suddenly developed a hemorrhage of the lungs and positive evidences of tuberculosis. In cases of doubt we should always resort to the tuberculin test. When a patient is suffering from the poisons of tuberculosis, the treatment by tuberculin is rational as well as successful. We simply immunize the patient against these poisons.

Dr. F. Tice: Dr. Metcalf has again emphasized the early diagnosis in tuberculosis. It is probably true that the majority of cases of incipient tuberculosis are obscure. They are not definite and distinct. The diagnosis many times is extremely difficult. He has also emphasized the use of tuberculin subcutaneously as a means of diagnosis.

It is not my purpose to precipitate a discussion on the use of tuberculin as a means of diagnosis, but I cannot refrain from referring to tuberculin given subcutaneously. Many cases under ordinary conditions react positively to the tuberculin test, particularly if the inoculation is repeated two or three times. Some interesting statistics have been reported by Franz in the *Wiener Klinische Wochenschrift*. He has collected a considerable number of cases among the new recruits in the Austrian army coming from a district where tuberculosis does not exist. He was able to demonstrate a tuberculin reaction in 38 per cent. In recruits coming from tuberculous districts he obtained a positive reaction in from 61 to 76 per cent. These cases have been followed up for a period of seven or eight years. The number of cases which subsequently developed tuberculosis of any kind, pulmonary or otherwise, has been very slight. Most of the men have remained free from tuberculosis, emphasizing again how much dependence can be placed even on a positive reaction to the subcutaneous tuberculin test and particularly where more than one injection has been made.

We all know that if we use one half milligram for an initial dose and do not get a reaction, then increase the dose to one milligram, we often get a positive reaction, and when we give two milligrams we get even a more positive reaction, bringing up the question of anaphylaxis.

Another point of considerable interest is the relative value of the cutaneous and the subcutaneous reaction. This has been investigated rather extensively and one of the best reports on this was made by Dr. T. D. Gordon at the National Association for the Prevention of Tuberculosis. He investigated a considerable number of cases and compared the results. He got a cutaneous reaction in 40 per cent. with a subcutaneous positive in 36 per cent., probably indicating that we can obtain the same amount of information from the cutaneous reaction as we can from the subcutaneous, and the cutaneous can be used in the presence of temperature and without absolutely any danger to the patient whatever. It is my opinion that it is safer and to be preferred.

I would not minimize in any way the work done by Dr. Metcalf. It should receive unlimited praise. I would emphasize, as he has, a thorough and careful examination of the patient regardless of the symptoms present. Many mistakes are made simply because we are misled by symptoms. Most of the cases are obscure, and therefore we should make a careful physical examination, and then you may, if you wish, use tuberculin as a diagnostic aid, but possibly the cutaneous test is to be preferred to the subcutaneous. If the subcutaneous test is used only one injection should be given.

—FACTS ABOUT MILK.—A prominent opponent of pasteurization relates the following as an incident of his personal investigation of the dairy farms supplying Chicago with milk: In the progress of a tour of inspection of a certain dairy he entered the barn unobserved by a young boy who was seated milking a cow, his back being turned to the investigator. The attitude of the boy was noticed as peculiar and on closer inspection the investigator, still unobserved by the boy, found that the lad had his dirt-encrusted feet perched on the rim of the milk pail milking directly upon them, first on one foot, then on the other, and permitting the milk to flow from his feet into the milk pail. After watching the operation for a few minutes the investigator upbraided the boy for his filthy practice, remarking that he was doing something which would probably cost the lives of many people. The boy's only reply was "What do you care, you ain't goin' to drink this milk; we ship it to the city." The foregoing is only one of the many ways in which filth gets into milk. Filth contains germs of disease and when these germs are deposited in milk, they develop very fast. If you drink this milk raw, you take into your body millions of *live*, disease-producing germs. The only way that you can make this milk reasonably safe is to pasteurize it before using. This heating process when properly conducted kills the germs; it prevents infection and death. Insist upon having pasteurized milk.—From *Bulletin Chicago Department of Health*.

Official Minutes

OFFICIAL MINUTES OF THE SIXTY-SECOND ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, HELD AT SPRINGFIELD, MAY 21, 1912

The Society met in the Assembly Hall of the Y. M. C. A. Building, and was called to order at 2 p. m. by Dr. George N. Kreider, chairman of the Committee of Arrangements, after which President W. K. Newcomb took the chair and said: This is a very auspicious opening of this meeting, and I trust it will be one of the best the society has ever had. In continuation of the order of proceedings, we will now listen to an invocation by the Rev. E. B. Rogers.

INVOCATION BY REV. E. B. ROGERS

Almighty God, Father of us all, we bow before Thee in grateful acknowledgment of Thy mercies to us. We thank Thee to-day for life and all that it means to us. We thank Thee for the capacity of knowledge. We thank Thee for the desire that men have to know this and to know that; we thank Thee for the experts along the line of the healing art — men who have reduced medicine to an exact science. God be with these physicians to-day and during this session, and grant that every session of every section may be prolific of great good. We thank Thee for this body of men — men first, and then physicians — men who are giving themselves unreservedly to the practice of manhood and the practice of medicine. We are thankful to the men here, there and everywhere who are the great cosmopolitans of this art, treating Methodists, Baptists, Presbyterians and Catholics, also treating the members of our families. We thank Thee that men are thinking not only along the line of healing of the body, but along physical therapeutics and physical prophylaxis; that men are beginning to realize that there is so much moral waste, so much of economic waste, and that men who are skilled in the healing art are giving careful attention along the line of social therapeutics and social prophylaxis. God be with the presiding officer of this convention, as well as with every individual member of the association, and grant that during each session of this society this annual meeting shall be productive of great good, not only to the members themselves who participate in the proceedings, but result in great good to our city, great good to the common kind. We ask it in Jesus Christ's name, Amen.

The President: The next will be an address of welcome by Hon. L. Y. Sherman, president of the State Board of Administration.

ADDRESS OF WELCOME BY MR. SHERMAN

Mr. President, Ladies and Gentlemen: The city of Springfield is very glad to have you members of a learned profession present. Springfield is a convenient town for meetings of this kind. There are some advantages here that would be absent in a larger city. A metropolis pays very little or no attention to the meetings of a single convention because of the great multitude of humanity there assembled, and an additional few hundred or a thousand cuts very little figure. Springfield is not so large that we do not notice every visitor within our gates. We are large enough to furnish accommodations for all the visitors that come. Here is the seat of the state government, of all the great departments which are represented here. The departments that concern you and with which you are more or less connected are here, and your profession is subject to the chances of legislation. It is subjected to the requirements of that legislation in executive action. It is subjected further to the decisions of the courts of last resort in the interpretation and the application of the rules made that regulate the practice of all professions. Your profession, like the practice of many other professions, and especially of the learned professions or occupations, is subject to the regulation of the state. This regulation comes because of the weaknesses inevitable in human nature.

A long time ago I heard a witness asked this question on mental competency when sworn; "Could the testator, the person making the will, attend to his affairs without the help of any other person?" Objection was made that it was not a proper question, and the court sustained the objection. When urged to give a reason for the objection, the court, who was simply a human being, and who was a lawyer by profession before he went on the bench, gave this sensible reason, that there is nobody in the civilized world that can transact his ordinary worldly affairs without the help of some other person. That might have been true in the savage state where everybody took care of himself or took care of his household. We do not find it possible to do so adequately in a civilized state. We are interdependent. We are leaning constantly on each other. No person, not even in pioneer days, found it possible to do everything well. Therefore the specialist in things, and especially the thing that requires a great deal of time, thought, experience and study to acquire all the accumulated information of those who have trodden the professional path before him, needs the assistance of others. In that sense this learned judge was right. None of us can attend to his affairs without the help of any other person. We are constantly required to help other persons. That help becomes more necessary the older and the more complex society becomes.

A man that will not undertake to join an iron pipe in his basement when his plumbing is out of order will undertake to administer some kind of remedy to the public and seek to impose his remedies on people generally. He will say "I have sovereign remedies to give to my people" although he may never have studied anatomy, surgery, medicine or anything pertaining to it, but he assures the people with the greatest confidence that the remedy is a sovereign cure for the thing prescribed, and

sometimes it may cure other things. (Laughter.) It is very important that a man shall know what he is giving or how it acts. If a plumber cannot repair a leak in a valve or does not know how to do it, we would not think very much of him. There is much more reason for thinking that the physician or surgeon should know how to do a thing, because he knows more about human anatomy and the relation of one part to another, and has studied the laws of human life more than any other class of men. This is only putting in a little different form what everybody knows.

Every person here who thinks about it knows that those who study some particular occupation or profession necessarily must know more about that than anybody else. So we learn to have confidence, and the more experience we have, the more confidence we have. We learn to have confidence in those who take up these occupations or professions. So when any of them meet here — the medical profession, the legal profession, the building trade association, the association of architects, anything that requires skill, knowledge, whether it be in the arts, sciences or the professions, whether it be in the fine arts, or whether it be in the useful arts, we can find here in Springfield always an appreciative audience because it draws not only from that occupation or profession all over the state, but it draws from everywhere.

Carrying out the idea that we depend on the help of other people. I wish to say that we need some regulations in this state. There are protections thrown about persons that cannot be diverted. In other words, the irresistible propensity of the average human being to buy a patent pump or some new-fangled device that will open itself by a species of absent treatment, or some contrivance that will keep the lightning from striking a barn and burning up the hay, or that will improve the Ben Franklin lightning rod, is always ready to sign any kind of contract, but sometimes they omit or overlook the precaution of reading the contract, and find that instead of having a lightning rod with three prongs, they will contract for a lightning rod that will act in three different ways, and the case winds up in a bank with a promissory note that does not mature, but is negotiated by a perfectly innocent person for maturity. If you find a fellow who does that sort of thing, you can reasonably assume that he has persuaded somebody else to do the same thing. We have statutes in this state that forbid that, that makes this paper in the hands of the innocent purchaser void, and which makes the securing of such paper on promise to pay money a penal offense, it being a part of the criminal code. So nobody can practice architecture in this state without undergoing the requirements provided in the examination and receiving a license therefor. You cannot do plumbing in this town or any other without having a plumber's license; you cannot build, following out the architect's plan, without a license. You cannot be an engineer, either stationary or locomotive, without certain requirements that are designed for the protection not only of those immediately concerned, but of the general public outside who have to deal with that occupation.

So the regulations that have come along are only reasonable ones, designed to protect those who require that protection, and it grows out of that very statement I have previously made that everybody is dependent on somebody else, and because we are dependent on other people for a great many things, we are likewise necessarily dependent on the medical profession.

The public are dependent on your profession, and they insist that you shall be protected by regulations so that charlatans and quacks, those who have no knowledge, those whom it would be dangerous to turn loose on a community, may not deceive the public by making claims to cure which are utterly false, and only those who are qualified should practice your profession; and this leads to the regulation of the medical profession by means of practice acts or examinations in such a way not only that those who are well qualified may practice, but that they may be allowed to do so within the limits of this state. This is merely protective because of the exercise of well-known police power.

There is no reason why, when it concerns matters that are connected with subjects that are national in their operation, that the same rules ought not to apply, at least in a limited way. Much of the police powers to be exercised by this department belong to the state. The great mass of affairs that touch everything we do, especially in the limits of an incorporated state, are those that are regulated by the state. Interstate transportation, interstate commerce, by rail or otherwise, is something that is essentially within the scope of national authority, and no reason can be presented why the exercise of the police power by national authority ought not to be supported. Legislation is subjected to executive action, and is subject to interpretation by the federal courts, and the application to cases that actually arise in the administration of the law.

These are only general observations. I do not wish at this time to go further into this matter except to say this, that in matters of state concern I have uniformly favored and voted on occasions for such proper regulations as would not only protect the public but protect your profession also. (Applause.) The man who gives liberally of his time and preparation, in hard study, in the money that is required to secure the training, and who fits himself for the practice of his profession, is entitled to protection against the unworthy member who does not come with that training. To that end regulation has been had in this state. Within the scope of whatever duty has fallen to my opportunity in that time, I have lent that help. I said on one occasion in speaking on the regulation of any profession or occupation, and wishing to know what was necessary to protect those who are fit to carry on that occupation or profession, that in putting on paper any proposed law, I would take the most advanced and well-fitted exponents of that profession or occupation, and find out from them what the average level is for the generation in which this legislation is to be enacted, and then take the collection of opinions from the active living members of that profession and embody them in a regulation and apply it to that profession or occupation for that generation or until fresh developments have made new legislation

necessary. (Applause.) There is no human law that is eternal and unchangeable in its operation. That only belongs to the Medes and Persians. It was demonstrated to be a failure after the Medes and Persians passed away. So when we say laws are unchangeable, we mean just what I have stated, that laws are made for the current, living, growing generation of to-day. The laws are made to conform to the present generation, but they may be amended or brought up to the requirements of a future generation and perform whatever service that is incumbent on them at that time.

Many, many years ago a slave was sent by his owner to a public path and told to bring back the number of men who used the path that day. He went and came back and his owner said: "How many persons were at the path?" He replied: "One." After a while another slave was sent and came back and was asked how many persons were at the path. He replied: "Fifty." The owner called his first slave and said to him: "Why did you tell me this morning that there were fifty people at the path, but only one was seen by you at the path? What do you mean?" The slave replied: "For many months there has been a huge stone lying in the pathway, and of the many going and coming all stumbled over the stone, but none removed it except this one man. Of all the men who saw the stone he was the only one who removed it at the time I was there." Now, I thought of mental science called the psychologic moment. (Laughter). That is all right. The man who takes a stone out of the path of any occupation or profession is a pioneer, and I want to apply this to the ancient story of the slave and the path place. I have lived long enough and so have you to see that great stone in the pathway of every useful thing that there is on earth. There is the stone. It may be indifference, it may be pride, it may be ignorance, it may be lack of knowledge, it may be lack of thorough scientific investigation, but there is the stone and many stumble over it. After a while there comes along some one who moves the stone out of the pathway of human progress, and he is the man out of fifty that does the deed. I think it is a fine thing for a man in any occupation, whether he is digging a ditch or performing a surgical operation, or doing some simple thing, or doing a great thing, to do it well. It is well for him to remember that in that pathway he is traveling the useful and honorable thing to do, if there is a stone in it, is to move it out, or at least to make an heroic effort to get it out, and somebody else will succeed if you do not. (Applause.)

ADDRESS OF WELCOME BY DR. S. E. MUNSON, PRESIDENT OF THE SANGAMON COUNTY MEDICAL SOCIETY

Mr. President, Ladies and Gentlemen: It has been delegated to me as the representative of the Sangamon County Medical Society to extend to you a welcome on behalf of its members. Most of you no doubt are familiar with the name Sangamon. It means much in the history of Illinois. Within the confines of its broad acres of fertile soil and splendid coal fields is situated the capitol. Some of the men who have become

familiar throughout this state and are a part of its history as well as of the nation, have had their residence and homes here in Sangamon County. The one whose name comes first to the minds of every one had his residence within a few minutes' walk of this meeting place. A pilgrimage to his home and monument is certainly a privilege and an inspiration. One of the parks bears his name. You should not fail to visit our parks, one of which is said to be among the most beautiful of its size in the United States, and I think when you see it you will agree with me that this is true. I simply mention these things to divert your minds from the responsibilities which you have laid aside in leaving your homes to attend this meeting; that you may forget the hard work and many long hours spent in the duties of your profession during the past severe winter; that you may enjoy to the fullest the program which has been arranged for your entertainment and pleasure.

First, I would call your attention to the scientific program prepared by the program committee of the state society. Having served on that committee for two years as chairman and secretary of the section on medicine, I fully understand its tasks and responsibilities. May I ask you to show your appreciation of their efforts by attending every session possible, and encouraging the essayists by your presence and discussion of the papers?

Second, the Sangamon County Medical Society as host fully appreciates the honor of having as their guests the members of the Illinois State Medical Society. This splendid body, with a membership of over 5,700, had its birth in the city of Springfield, when the Illinois State Medical Society was organized here over fifty years ago, by a mere handful of physicians. When we consider the difficulties of travel at that period of time as compared with that of the present, we can understand the spirit that prompted these early pioneer physicians to join themselves together for mutual assistance and for the advancement of scientific medicine.

Since that first meeting held in Springfield, including the present meeting, I understand this is the ninth time that the annual session has been held in this city. It is the hearty wish of the Sangamon County Medical Society that your visits will be more frequent during the period of the next sixty years.

We have at the present time in our county a membership of over 100 physicians, and for attendance and enthusiasm it will compare with any society in the state. I bring you greetings and a hearty welcome from every member.

The Committee of Arrangements, from whose chairman you will soon hear a report, together with its subcommittees, has prepared a program of reception and entertainment that I am sure you will all enjoy. This is especially true for the entertainment of the ladies.

I believe I am voicing the sentiment of the membership of the Sangamon County Medical Society when I say that the happiest recollections we can have of your stay with us will be not only the entertainment which has been planned for you, and the splendid scientific program, but in

the harmony that prevails in the deliberations of the transactions of the society. I trust you will stay until the entire session is over, and when you have returned home you will have had such a good time that you will feel that you have had a real vacation, and remember the sixty-second annual meeting of the Illinois State Medical Society as one of the most enjoyable in its history. (Applause.)

After announcements as to the places of meeting of the sections, entertainments, etc., by the chairman of the Committee of Arrangements, Dr. George N. Kreider, the general meeting adjourned.

MINUTES OF JOINT MEETINGS OF SECTIONS ONE AND TWO

SECTION ONE.—Chairman, Sumner M. Miller, Peoria; Secretary, Charles A. Elliott, Chicago.

SECTION TWO.—Chairman, E. B. Owens, Dixon; Secretary, N. M. Percy, Chicago.

MAY 22, 1912 — FIRST MEETING

The joint meeting of these sections was called to order by Chairman Miller at 8:15 a. m.

Dr. James B. Herrick, Chicago, read a paper entitled "Non-Surgical Recurrences of Malignant Growths After Operation."

This paper was discussed by Drs. Fuller, Keyes, Allaben, Stremmel, and the discussion closed by Dr. Herrick.

Dr. Allen B. Kanavel, Chicago, read a paper entitled "The Abdominal Crisis; A Plea for Its Recognition as a Surgical Entity."

Discussed by Drs. Fuller, Collins, Harsha, Fairbrother, Stremmel, Schroeder, Eisendrath and Herrick.

Dr. Robert B. Preble, Chicago, read a paper entitled "Report of Recent Epidemic of Streptococcic Infections in Chicago."

Discussed by Drs. Capps, Dwan, Rosenow, Gehrmann, Harris, and the discussion closed by Dr. Preble.

Dr. Herman Kretschmer, Chicago, followed with a paper on "Fulguration Treatment of Bladder Tumors."

Discussed by Dr. Bremerman.

On motion, Drs. Rosenberger of Philadelphia; D. S. Fairehild of Clinton, Iowa, and Lawrence W. Littig of Davenport, Iowa, were made members by invitation and accorded the privileges of the floor.

Dr. Henry S. Plummer, Rochester, Minn., by invitation, read a paper entitled "Notes on Thyrotoxicosis from a Study of Three Thousand Cases of Goiter."

Discussed by Drs. Churchill, Ritter, Eisendrath, Mettler, and in closing by the essayist.

Dr. William R. Cubbins, Chicago, read a paper entitled "Anomalies and Malpositions of the Colon, Congenital and Acquired," which was discussed by Drs. Percy, Beck, Beasley, Eisendrath, Harris, O'Byrne, and discussion closed by the author of the paper.

Dr. J. H. Bacon, Peoria, read a paper on "Anterior Poliomyelitis," which was discussed by Drs. Mettler, Fairbrother and Cotton, after which the discussion was closed by the author of the paper.

Dr. Herman A. Brennecke, Aurora, read a paper on "Operative Treatment of Fractures," which was discussed by Drs. Kreider, Buford, Fairbrother, Nelms, Fairchild, and discussion closed by the essayist.

Dr. H. M. Richter, Chicago, read a paper on "The Surgical Aspect of Pyloric Stenosis in Infancy."

Discussed by Drs. Buford, Beasley and Murphy, after which the discussion was closed by Dr. Richter.

Dr. Edward C. Rosenow, Chicago, read a paper on "Vaccine Treatment of Some Unusual Infections, with a Report of Illustrative Cases."

Discussed by Dr. Gehrmann, and in closing by the essayist.

Dr. William A. Evans, Chicago, presented a paper on "The English National Insurance Bill," which was discussed by Drs. Percy, Pettit, and in closing by the author of the paper.

Dr. Carl B. Davis, Chicago, read a paper entitled "Treatment of High Cancer of the Rectum," which was illustrated by numerous slides.

The paper was discussed by Dr. Kanavel.

Dr. Daniel N. Eisendrath, Chicago, followed with a paper, which was illustrated by numerous slides, entitled "What the General Practitioner Should Know Concerning the Surgical Diseases of the Kidney."

This paper was discussed by Drs. Stremmel, Percy, Davis, and the discussion closed by Dr. Eisendrath.

Dr. Roland Hazen, Paris, read a paper entitled "A Method of Operation for the Radical Cure of Enteroptosis, with Preliminary Report of Cases with One Hundred Per Cent Cured."

This paper was discussed by Dr. Eisendrath.

On motion, the meeting adjourned until Thursday, 8 a. m.

THURSDAY, MAY 23, 1912

The joint meeting of the sections was called to order at 8:20 a. m. by Chairman Miller.

Dr. S. A. Knopf, New York City, gave a "Demonstration of Physical Means of the Early Recognition of Pulmonary Tuberculosis."

Dr. Arthur B. Eustace and Dr. Ralph C. Hamill, Chicago, read a joint paper on "Diagnosis in Cases of Cranial Trauma."

The paper was discussed by Drs. Moyer, Norbury, Beck, and the discussion closed by Drs. Eustace and Hamill.

Dr. Bertram W. Sippy, Chicago, read a paper entitled "An Improved Method of Dilating Esophageal Strictures."

The paper was discussed by Drs. Cubbins, Maley, and the discussion closed by Dr. Sippy.

Prof. Henry B. Ward, Urbana, read a paper entitled "Means of the Accurate Determination of Human Internal Parasites."

Discussed by Drs. Gehrmann, Sippy, and the discussion closed by Professor Ward.

At this point the following report of the Nominating Committee was read and adopted:

Chairman, Section One, Dr. Frank P. Norbury, Springfield; Secretary, Dr. Frank S. Churchill, Chicago.

Chairman of Section Two, Dr. S. C. Glidden, Danville; Secretary, Dr. H. M. Richter, Chicago.

Dr. Edward S. Murphy, Dixon, read a paper entitled "Indications for Gastro-Enterostomy."

This paper was discussed by Drs. Hugh McKenna, Eisendrath, Holliday, Sippy, Oren, and the discussion closed by the essayist.

Dr. Solomon Strouse of Chicago read a paper entitled "Brill's Disease, Mild Typhus Fever, in Michael Reese Hospital."

There was no discussion on this paper.

Dr. L. C. Gatewood of Chicago read a paper entitled "A Study of Fourteen Hundred Wassermann Reactions."

Dr. Lawrence Ryan of Chicago read a paper entitled "Osteomata and Muscle Degeneration."

Dr. Everett J. Brown of Decatur read a paper entitled "Orthostatic Albuminuria."

Dr. J. E. Coleman, Canton, read a paper entitled "Movable Kidney; Should We Operate, or Should the Patient Wear a Kidney Truss?"

On motion, an adjournment was taken until 2 p. m.

The society reassembled at 2 p. m. to carry out the special order.

President W. K. Newcomb, Champaign, delivered the President's Address. He selected for his subject "The Physician Considered from an Economic Standpoint."

Dr. Dudley P. Allen, Cleveland, Ohio, delivered the Oration on Surgery, his subject being "Essential Factors in the Development of Surgery."

Dr. S. A. Knopf, New York City, delivered the Oration on Medicine. He chose for his subject "Some Modern Medico-Sociologic Conceptions of the Alcohol, Venereal Diseases and Tuberculosis Problems."

At the conclusion of these addresses, Dr. J. E. Coleman, Canton, moved that a vote of thanks be extended to Drs. Allen and Knopf for their admirable and instructive addresses and for coming so far to deliver them. Motion seconded and carried.

President Newcomb, before introducing his successor, appointed Drs. W. F. Grinstead and L. C. Taylor to escort the President, Dr. L. H. A. Nickerson, Quincy, to the platform.

Dr. Nickerson on ascending the platform was warmly received.

Dr. Newcomb, in introducing Dr. Nickerson, said:

Ladies and Gentlemen: I have the pleasure of introducing to you the president for the ensuing year, Dr. L. H. A. Nickerson of Quincy. It is another illustration of the fact that we live in an age of progress and things grow hotter as they advance, and Dr. Nickerson is a decided advance in the line of presiding officer. The gavel itself is all right in

Dr. Nickerson's possession, and the archives of the office are at his disposal. (Applause.)

[Dr. Nickerson's remarks on assuming the chair appeared in the June JOURNAL, page 740.]

At the close of Dr. Nickerson's remarks, Dr. Newcomb said: I feel it would be entirely discourteous on my part to retire without expressing to a certain degree the feeling of high appreciation I have for the kindness and courtesy this society has shown me during the past year, and this includes not only the physicians present at this meeting but various physicians throughout the state. I have been kindly received, far better than I expected, and I certainly appreciate the kindness that has been shown me by the members of the organization. I want to thank you at this time on retiring for all the courtesies and all the kindnesses I have received at your hands, and I bespeak a continuation of them for my successor, Dr. Nickerson. (Applause.)

As there was no further business to come before the society, the general meeting adjourned, and a joint meeting of the sections was held.

Dr. Karl K. Koessler, Chicago, read a paper entitled "Bronchial Asthma Due to Hypersusceptibility to Eggs."

Dr. W. F. Grinstead, Cairo, read a paper on "Three Cases of Hernia Complicated by Undescended Testicle."

Dr. E. B. Cooley, Danville, read a paper on "Duodenal Ulcer."

Dr. J. H. Stealy, Freeport, contributed a paper entitled "Review of Twelve Cases of Pernicious Anemia; Report of Metastatic Focal Infections in the Puerperium."

Dr. George T. Palmer, Springfield, contributed a paper on "The Efficiency of Illinois Municipal Health Departments."

Adjourned.

MINUTES OF THE SECTION ON EYE, EAR, NOSE AND THROAT

Chairman, Dr. Willis O. Nance, Chicago; Secretary, Dr. George F. Suker, Chicago.

MAY 22, 1912 — MORNING SESSION

The section met in the sun parlor of the Leland Hotel, and was called to order at 9 a. m. by the chairman.

Dr. Joseph C. Beck, Chicago, read a paper entitled "Combination Operations Between General Surgeons and Otolaryngologists."

This paper was discussed by Drs. Ballenger, Stein, Tivnen, and in closing by Dr. Beck.

Dr. C. B. Welton, Peoria, read a paper entitled "Hemorrhage as a Cause of Blindness," which was discussed by Drs. Wood, Ballenger, and in closing by the essayist.

Dr. J. Whitefield Smith, Bloomington, read a paper entitled "Adenoid Vegetations in the Nasopharynx."

This paper was discussed by Drs. Ballenger, Tivnen, Woodruff, Mundt, LeSage, Welton, Beck, Broderick, Ballenger, Boot, Mundt, and in closing by Dr. Smith.

Dr. C. F. Burkhardt, Effingham, read a paper entitled "The Traumatic Dislocation of the Crystalline Lens without Rupture of the Eyeball; also Report of a Case Treated."

Discussed by Drs. Suker, Middleton, Gleeson, Tivnen, Guthrie, Nance, and in closing by Dr. Burkhardt.

Adjourned.

AFTERNOON SESSION

The section reassembled at 1:30 p. m.

Dr. Casey Wood, Chicago, read a paper entitled "Accidents and Complications Attending or Following the Extraction of Senile Cataract."

Discussed by Drs. Woodruff, (H. W.) Nance, Suker, Burkhardt, and in closing by Dr. Wood.

Dr. Thomas A. Woodruff, Chicago, read a paper entitled "Prevention of Blindness and Conservation of Vision," which was discussed by Drs. Suker, Nance and Guthrie.

Dr. George F. Suker, Chicago, gave a talk on "The Use of a Conjunctival Flap in Perforated Wounds of the Anterior Globe," which was accompanied with blackboard diagrams.

Discussed by Drs. Nance, Tivnen, Woodruff, and the discussion closed by Dr. Suker.

Dr. William L. Ballenger, Chicago, read a paper entitled "The Rationale of Sinus Disease and Its Treatment."

Discussed by Dr. Beck, and in closing by the essayist.

Dr. Otto J. Stein, Chicago, followed with a paper on "Acute Inflammation of the Thyroid Gland," which was discussed by Dr. Beck.

Dr. H. W. Woodruff, Joliet, read a paper entitled "The Treatment of Secondary Divergent Strabismus."

Discussed by Drs. Tivnen, LeSage, Suker, Sterling, and in closing by the essayist.

Dr. C. A. E. LeSage, Dixon, read a paper entitled "Treatment of Corneal Ulcers."

Discussed by Drs. Woodruff (H. W.), Thomas, Tivnen, Guthrie, Nance, Suker, and in closing by the essayist.

Dr. A. B. Middleton, Pontiac, read a paper entitled "Importance of the Eye Symptoms in Albuminuria of Pregnancy."

This paper was discussed by Drs. Gleason, LeSage, Prince, Suker, and the discussion closed by Dr. Middleton.

The section then adjourned *sine die*.

OFFICIAL MINUTES OF THE HOUSE OF DELEGATES

MAY 21, 1912 — FIRST SESSION

The House of Delegates met in the Assembly Hall of the Y. M. C. A. and was called to order at 8:20 p. m. by the President, Dr. W. K. Newcomb, Champaign.

The following were appointed as a Committee on Credentials: E. W. Weis, Chairman, D. G. Smith, L. C. Lacy, John A. Robison, and Frederick Tice.

The Committee on Credentials made a preliminary report, and 112 delegates responded to the call of the roll.

The President: The delegates named will be accepted as members of the House of Delegates, and there being a quorum present we will proceed with the business.

Dr. Christie: Can we have a ruling on the appeal from the Committee on Credentials as to the delegate from Adams County?

I hereby make formal appeal from the decision of the Committee on Credentials in which I, the delegate of the Adams County Medical Society, having and presenting official credentials from the Adams County Medical Society, have been denied a seat as a delegate.

The President: Is it your desire to have a ruling on this question?

Dr. Christie: I demand it. The appeal is with the secretary and has been presented in legal form.

The President: The Chair feels under obligations to accept the report of the Committee on Credentials, unless there is something definite to show in the way of objection.

Dr. Christie: With all due respect, I appeal from the decision of the Chair, and should like to have a vote on it.

The President: You have heard the question. The Chair has rendered a decision accepting the report of the Committee on Credentials, and the gentleman appeals from the decision of the Chair to this House of Delegates. It is a question of accepting the report of the Committee on Credentials in regard to the delegate from Adams County. Are you ready for the question?

Dr. A. C. Cotton: I do not think it is hardly right for this body to vote on a matter concerning which they know nothing. Before we can vote on it we ought to know something about the point at issue. Here is a gentleman, a member of the State Medical Society, presumably a member of the Adams County Medical Society, who is contesting his seat as a delegate, and we are asked to vote on a question of sustaining the decision of the Chair. I do not know how it is, but I have not the slightest idea on what technical question this vote should be taken. I move that we refer this matter to a committee, who shall hear the evidence and study the question fairly in order that we may vote intelligently on it.

Dr. D. G. Smith: I desire to speak in behalf of the Committee on Credentials. The President has decided this matter inasmuch as he has endorsed the report of the Committee on Credentials. Your committee has heard the evidence. We have looked over the documents, have examined the credentials, and we have unanimously decided that Dr. Rice is the legally elected delegate to sit in this house, and the vote that is before this house is only whether you intend to sustain the action of your committee or not.

Cries of Question! Question!

Dr. John A. Robison: I wish to correct one statement just made by Dr. Smith, and that is, the vote of the committee was not unanimous.

A Delegate: I second the motion of Dr. Cotton.

Dr. Smith: Inasmuch as my statement has been questioned, I have a right to an explanation. I am very sorry my colleague on the committee is so short in his memory, because he voted with the rest of us.

Dr. Robison: I beg pardon — no.

Dr. Smith: I will leave it to my other colleagues if you did not vote in the affirmative.

Dr. Robison: No, sir.

Dr. Smith: Dr. Weis acted as chairman, and he may answer, and I would ask any other members of the committee if this gentleman did not vote to place Dr. Rice in this house. Let them get up and speak.

Dr. L. C. Taylor: I rise to a point of order.

The President: Please state your point of order.

Dr. Taylor: The question before the house is whether or not the decision of the Chair should be sustained. As long as that question is before the house the motion of Dr. Cotton is not in order.

Dr. Hamilton: This gentleman from Adams County brings here credentials that are properly signed, he says, and I cannot understand why we as delegates ought not to be entitled to some explanation of this matter, and further I do not understand why the committee does not want to give us information about it. Why should we be denied this information?

Dr. Weis: The committee does not refuse any information.

Dr. Christie: There seems to be an expressed desire to have information on this point, and I would like to inform the house that we have that information in our records. We have it with us, and will be glad to submit these records to the House of Delegates.

Cries of Question! Question!

The President put the question, and as there was some doubt as to the result, a division was called for, with the result that there were fifty-five in favor of sustaining the Chair, and fifty-four against.

The President: The Chair is sustained by a small majority.

Dr. Robison: I wish to apologize to Dr. Smith for my short memory. I did vote on this question, but it was another name which I had in mind that I did not vote on, and Dr. Smith's statement is correct. (Applause.)

Dr. Christie: Before retiring, I wish to challenge every vote cast by J. H. Rice as an alleged delegate from Adams County.

Dr. Carl E. Black read the report of the Council, as follows:

REPORT OF THE COUNCIL

SPRINGFIELD, ILL., May 21, 1912.

To the House of Delegates of the Illinois State Medical Society.

Gentlemen: In accordance with the instructions and by-laws of the Illinois State Medical Society, it becomes my official duty as chairman of the Council to present the report of that body of the work done during the interim since the last annual meeting.

Six meetings of the Council have been held during this year as follows: Chicago, Ill., June 17, 1911; Springfield, Ill., August 24, 1911; Chicago, Ill., October 17, 1911; Springfield, Ill., November 4, 1911; Chicago, Ill., January 4, 1912; Springfield Ill., April 16, 1912. As usual the April meeting was held in Springfield in order that the Council could inspect the various rooms proposed for the sessions, exhibits, etc., of the next annual meeting.

CHARGES

This year there has been one case referred to the Council for trial as to the right of membership. This was from Adams county in the sixth district in which J. Estill Miller claimed to have been unlawfully deprived of membership in the Adams County Society. Dr. Clarence A. Wells of Quincy, Illinois, presented the matter for the appellant and Dr. Kirk Shawgo, of Quincy, Ill., presented the matter for the Adams County Medical Society. After hearing all that both parties had to present the Council, after due deliberation, submitted the following opinion:

We find that Dr. J. Estill Miller was prior to Nov. 27, 1911, a member in good standing of the Pike County Medical Society and that at some time prior to that date he removed from Pike County to Adams County, receiving from the Pike County Medical Society a transfer card, showing him to be a member in good standing of that Society and that all his dues, both County and State, were paid.

Under the following by-law of the Adams County Medical Society, viz.: "Any physician with a transfer card from another component Society of this, or any other state, shall be admitted without fee, provided the State dues have been paid." However, such application shall be referred to the Board of Censors and take the regular course. The name of Dr. Miller who was already an honorary member of the Adams County Medical Society, was sent to the Board of Censors of the Adams County Medical Society, and on Dec. 11, 1911, he was unanimously recommended for membership by that Board, notwithstanding the fact that the transfer card was not before the board for consideration.

At the same meeting at which this report of the Board of Censors was made, his membership was rejected by vote of the Society. On Feb. 12, 1912, at the regular meeting of the Adams County Medical Society, the action of the December meeting was rescinded by a three-fourths vote of those present and the name of Dr. Miller was accordingly placed on the Roster of the Adams County Medical Society and he signed the Constitution and by-laws and paid the dues required of him.

On March 11, 1912, at the regular meeting of the Adams County Medical Society, a majority of the members voted to rescind the action of Feb. 12, 1912, and declared that Dr. Miller was not a member of the Adams County Medical Society. The effect of this motion in our opinion, was to deprive Dr. Miller of membership without due process of notice and trial. In consideration of the above quoted by-law of the Adams County Medical Society, and on the various steps taken by the Society in presenting Dr. Miller's name to the Board of Censors; in the unanimous report of the Board of Censors; in the two votes of the Society by the first of which Dr. Miller failed of election and by the second he had the necessary majority to elect, we believe that Dr. Miller was, in fact, made a member of the Adams County Medical Society. It appears from the facts as presented that the Society took such steps as it deemed necessary and after following out these steps formally declared Dr. Miller a member. While there are several points of irregularity in the method of procedure, we believe that as a matter of fact the Society did elect Dr. Miller and that he was a member entitled to all the rights and privileges of the Society. This view is strengthened by the further facts that the by-laws of the State Medical Society of which the Adams County Medical Society is a component unit, says in Section 8, Chapter 10, "When a member in good standing in a component Society changes his residence

into another county in this State, his name shall be transferred without cost to the Roster of the County Society into whose jurisdiction he moves."

While many county societies do not observe this by-law of the State Society and while the opinion is generally held that the by-law will often work an injustice, it is the opinion of your Council that the only way in which Dr. Miller can be removed from the Roster of the Adams County Medical Society, is by notice and trial as provided for in the by-laws of that Society.

Respectfully submitted, COUNCIL.

LOCAL SOCIETIES

The work of most of the county societies shows improvement in character and in attendance. The number of members increases each year, but it is still necessary to report that in a few counties the local society is little more than a name and has not yet undertaken active systematic work for its local profession. It seems difficult to get some members of the profession to understand that a large proportionate attendance is not essential to a successful meeting. Every councilor can certify from repeated experiences that some of the most profitable meetings that they have attended in the various counties have had only a small proportion of the physicians of the county present. While it is very desirable to have every physician in a county present at each meeting this is not as important as the spirit and earnestness with which the meeting is conducted. A few earnest men, gathering regularly for earnest study will accomplish more for the profession and for the community than a large turn-out to hear some foreign lecturer discourse on a scientific subject which may be of little practical importance to the medical community to which it is presented. We would not in the least disparage such discourses but we earnestly plead with each county society to enter at once into earnest and serious study of the problems of medicine. Four or six men coming together regularly for such study will accomplish more than any show meeting. Your councilors regret to report that there are many counties in the State into which they have, as yet, failed to instill this spirit. In fact, we believe that the spirit of earnest study naturally comes down from those who enjoy superior advantages and facilities and that an unusual obligation rests on such members to bring to the house of delegates and all other departments of this society fresh problems on which the constructive work of the session can be based and from which the delegates and members can take home wholesale suggestions for the year's work in the county society. Your councilors regret to suggest that at times it seems that all the energy of those who should lead in medicine is given up to a mere struggle for control of the machinery of society organization. One searches the record of last year's sessions of this House of Delegates in vain for a single item of constructive work. In some counties the whole official energy is being frittered away in a struggle to continue control of the local machinery and secure control of the state and national machinery as though the sole object of our elaborate organization was to furnish pabulum to the ambitions of the mere medical politician rather than to initiate constructive policies of study, discussion and work which will aid us in solving the many pressing problems of preventive medicine, diagnosis and treatment. The sick and suffering are too often lost sight of in the scramble for power and machinery prestige. It sometimes seems to your council that our organizations are top-heavy in machinery and altogether too light in practical results. Many of our best men are driven away from active participation in the work of our organization by the unnecessary time and energy which is consumed in greasing and running the machine. We earnestly enjoin a more serious and active devotion to the real objects for which we are organized—namely, "to extend medical knowledge and advance medical science, to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition and to enlighten and direct public opinion in regard to the great problems of state medicine."

PRESIDENT NEWCOMB

President Newcomb has visited many of the counties during the year and discussed the question of organization. His work has had a most excellent effect and your councilors only regret that the state of his health has not permitted his visiting every county in the state. At the meeting of the council every councilor presented a report giving more or less in detail the conditions in each county. It would be an excellent thing if time would permit the making of extensive quotations from the reports of the local secretaries regarding conditions. Unfortunately your councilors are still unable to secure reports from every county. In many instances the secretaries fail to send these reports and in many other instances the reports contain little or nothing except the names of the members. We would again urge upon the county secretaries the necessity of detailed reports to the councilor.

THE JOURNAL

The JOURNAL has appeared every month during the year. We are able to report that in no year since its existence had so few complaints been received but on the contrary more kind words of commendation for the JOURNAL have been heard during the past year than in any previous year. We believe that the editor and his associates have succeeded in making our JOURNAL one of the best, if not the best, state journal in existence. Necessarily there are occasionally differences of opinion between the editor and some members regarding material which appears in our columns but everyone should realize that no journal can be managed without an editor and that his foremost duty is to determine the quality and quantity of the material which is printed.

There has been no complaint during the year regarding anything advertised, as the policy of accepting no advertising which was not acceptable to the Council of Pharmacy and Chemistry of the A. M. A. has been strictly adhered to.

Recently considerable correspondence has been had with the printers regarding a fixed date of issue and we are pleased to report that it has been agreed that the JOURNAL hereafter shall be shipped from Chicago on the first Wednesday of each month. This can only be accomplished by the cooperation of every one so that all copy and final proof can be in the hands of the printer not later than the morning of the previous Thursday. We trust that the printer will have the cooperation of everyone in maintaining a regular date of issue. This should put the JOURNAL in the hands of the readers on the first Saturday following the first Wednesday of each month.

We would again call your attention to the suggestion of the council made in three previous reports regarding the weekly or bi-monthly issue of the JOURNAL. We believe that our Society is large enough and strong enough to maintain a weekly or bi-monthly journal. The profession deserves to have the medical news while it is fresh. We trust that the House of Delegates will give this matter serious consideration as the council is unanimous in recommending a more frequent issue of the JOURNAL.

TREASURER'S REPORT

The report of the treasurer up to Jan. 1, 1912, has been published in the JOURNAL, and it is not necessary to report the detail here except to remind you that the balance is on the right side notwithstanding the fact that you have been exceedingly liberal with your expenditures.

INDEX OF THE TRANSACTIONS

At a meeting of the Council in Chicago, Jan. 4, 1912, on motion of Councilor Harris properly seconded, the Publication Committee of the Council and the Editor were authorized to have compiled an index of the Transactions of the Illinois State Medical Society for the first fifty years of its existence. That is, up to the beginning of the publication of the JOURNAL. Upon investigation we found that this could be done at a cost not to exceed \$1,000. (Printing and proof reading excepted, of course.) We hope within the next year to place a copy of

this index in the hands of every member of the State Society and in every medical library in the land. The preliminary index has already been made and is now being put into form for the printers.

PREVENTIVE MEDICINE EDUCATION

In its last report your council suggested that the Illinois State Medical Society take a more active part in a campaign of education of the laity along preventive medicine lines. There is a great opportunity along this line for this society to render service to the public, and we would urge the House of Delegates to give greater attention to the education of the public in Preventive Medicine. The Council on Health and Public Instruction of the A. M. A. has sent into Illinois over 20 speakers during the year who have discussed the various phases of the subject in as many counties throughout the State. We are pleased to report that lectures have been well attended and highly appreciated. It is an important work and much is being accomplished.

Through various agencies a demand is being created for health discussions and the profession should be still further organized so that this form of education could be carried down to the smallest village. Every school house in the State should have at least one public talk every year on the question of the public health at which not only the children but the parents would be present.

Coincident with these talks is a demand from the local press for articles on the subject of health. They are anxious to secure well written articles on pure milk, pure water, contagious diseases of children, etc. There is an urgent need of more detailed and widespread information along these lines. By a little effort and the expenditure of some money for existing committees, especially that of public policy, it could greatly extend its usefulness to the public and the profession. We would suggest an active campaign be inaugurated along the line of public instruction in health and sanitary matters.

We have been requested to call your attention to the feasibility and propriety of the State Society furnishing leaflets on these and allied subjects as well as social hygiene to all who would use them. We respectfully commend this matter to your attention.

NEW SECTIONS

One of the most wholesome occurrences of the year has been a demand for new sections. For several years no provision has been made for the specialists and these members had largely stopped attending the sessions. This year the president had applications from the Eye and Ear men and the Public Health men to organize sections and both of these subjects will be more largely represented than for a number of years. We would suggest that this House of Delegates take steps to organize permanent sections in special fields of practice and also that a section embracing all Public Health Officers be organized, in which practically every city and county would be represented.

UNIVERSITY MEDICAL SCHOOL

At the recent session of the legislature the appropriation to support the University of Illinois was defeated and the continuance of the department made impossible. President James of the university is anxious to have the question of a University Medical School considered by the profession of the state. We would suggest that President James be invited to address the House of Delegates on Thursday morning immediately after the election of officers, in order that we may be advised first-hand of his views on this important question.

SUPPLEMENTARY REPORT

Your Council could not complete its report on Medical Education in time to present it at this session but will present it at the next session in the form of a supplementary report.

Dr. Christie (speaking from the gallery): Will Dr. Black yield to an interruption?

Cries of Go on with the Report! Go on with the report!

At the conclusion of the report, Dr. Black said: On account of our inability to meet with a subcommittee on medical education, we ask leave to present the topic of medical education at a future meeting of the House of Delegates, probably on Thursday.

The President: You have heard the report. What disposition do you wish to make of it?

Dr. William L. Noble: I move that the report of the Council of the Illinois State Medical Society so far as given be printed for the benefit of the delegates and submitted for approval at the Thursday meeting of the House of Delegates.

Motion was seconded by Dr. Pettit and Dr. Zurawski, and carried.

The secretary read the report of the Committee on Scientific Work, as follows:

COMMITTEE ON SCIENTIFIC WORK

The Committee on Scientific Work met at Springfield, Aug. 24, 1911, and formulated the following: That there shall be 36 papers on the program of the next annual meeting. Of these 36 papers, four shall be given by the secretary's conference.

The annual meeting shall begin on Tuesday afternoon at 2 p. m., and the session formally opened by the president, to be followed by the various addresses of welcome, response by the president, and report of the committee on arrangements, and the session of the secretary's conference.

Tuesday evening shall be devoted to the House of Delegates, the meeting to begin at 8 p. m.

Wednesday, at 8 a. m., shall begin the scientific program which shall continue without intermission until 6 p. m.

The House of Delegates shall not meet on Wednesday, so that the delegates may have the opportunity of attending the scientific sessions.

Wednesday evening shall be devoted to such entertainment as shall be provided by the Committee on Arrangements.

Thursday, at 8 a. m., shall reconvene the scientific program and continue until final adjournment. The president's address and the orations on medicine and surgery shall be given on Thursday afternoon at 2 p. m.

Sectional officers are empowered to procure such orators for their respective sections as they desire. The necessary traveling expenses of the same to be paid by the Council.

The Scientific Program is to be of a mixed character, medical, surgical, and special subjects presented in such order as seems best to the sectional officers. Two symposia are to be held, the subjects to be later considered.

The tentative program is to be printed in the April number of the JOURNAL with the synopses; therefore, the manuscripts of the same must be in the hands of the editor by the March 15 at the very latest.

The President: What will you do with the report?

Dr. George N. Kreider: I move it be accepted and placed on file.

Motion seconded by Dr. Robison and carried.

Dr. A. M. Harvey, Chicago, Chairman, presented the report of the Committee on Public Policy, as follows:

REPORT OF THE COMMITTEE ON PUBLIC POLICY

Dr. A. M. Harvey, Chicago, chairman, presented the report of the committee as follows:

The report from your Committee on Public Policy has, at least, the merit of brevity. Several subjects have been discussed. Two topics are brought to your attention: (a) Social or sex hygiene. (b) National health bureau.

A long introduction to these two important questions is superfluous to a gathering of scientific men.

The resolutions your committee presents might easily be elaborated. We believe, however, they contain the essential points on the subjects and are so self-explanatory that the general public may have no doubt as to the attitude of this society on these questions.

Your committee sincerely hope that these resolutions will meet with your approval, be adopted by this House of Delegates, and that a greater public interest be manifested in these questions in the future. We feel that a discussion on social hygiene, a subject in which the parents of this state are and should be vitally interested, and also upon the proposed national health department, the purpose of which is to conserve the health of the nation individually and collectively, and make only for good.

Society looks to the organized medical profession for its teachers on matters of health and sanitation. The regular medical profession, always prompt to the demands of the public in pointing out the dangers of contagious and transmissible diseases, too long has delayed in a concerted action on the subject of sex hygiene, and too much harmful influence has been exerted by the charlatan and quack, whose only interest in our people is selfish and monetary, whose chief desire is to shroud the subject with ignorance and mystery.

SOCIAL OR SEX HYGIENE

WHEREAS, The so-called social or venereal diseases entail misery and suffering on the individual, hardship on the family, and are a constant menace to the health of the community; and,

WHEREAS, They are responsible for the expenditure of large sums of money by the state for the care of many unfortunates, and they also deprive society of the service and earning power of these people; and

WHEREAS, These diseases can be prevented and the spread of their contagion among the innocent, especially women and children, be restricted; and

WHEREAS, A policy of silence and ignorance should no longer be tolerated, but information on the evil and devastating effects of these diseases should begin with parental instructions to the young in the homes of our people, and children made to understand the dangers that threaten from these disease; and

WHEREAS, The medical profession, always generous with its scientific knowledge in the alleviation of human suffering and in the promotion of general good health, by advice, suggestion and teaching can do much to relieve the distressing conditions caused by these diseases; therefore, be it

Resolved, That the members of this society are urged to further greater activity in explaining to the fathers and mothers of our state the mode of transmission, character and resulting effects of these venereal or social diseases, and that the component societies of this organization lend aid in the dissemination of scientific knowledge on this subject by open meetings for parents and adults, and that the local press be requested to give this information to their readers either in full or in abstract; and, be it further

Resolved, That the officers of our county and local societies are directed to urge and secure cooperation with local men and women's clubs, and especially with the branches of the federated women's clubs for joint meetings at which physicians of the community may present the health and disease aspect of this subject; and, be it further

Resolved, That the Committee on Public Policy of this society by adoption of these resolutions be and is hereby sanctioned to arrange a list of volunteer speakers interested in this subject willing to cooperate with our county societies on request.

NATIONAL HEALTH BUREAU

We endorse the position taken by the American Medical Association in support of Senate Bill No. 1, commonly known as the Owen Bill, and call on the members of the Illinois State Medical Society to exert their influence not only with their congressmen, but also with their neighbors and friends for greater activity of the national government in the protection of human health and efficiency.

A. M. HARVEY, Chairman,
W. K. NEWCOMB,
W. L. BAUM,
FRANK P. NORBURY,
E. W. WEIS.

At the conclusion of the report Dr. Harvey said: I move the adoption of the report.

Dr. J. W. Pettit: I second the motion, and I do not see any reason why the suggestions of this committee may not be adopted along with the report, so that we can dispose of the whole matter now.

The President: It looks as though we might do that.

Dr. Harvey: I will accept the suggestion of Dr. Pettit, but before the report is adopted I wish to say that we have present with us to-night the chairman of the National Confederation of Women's Clubs, who is also a member of this society, and I move you, Mr. President, that she be given the privileges of the floor to speak on this subject.

Dr. Rachelle S. Yarros, Chicago, ascended the platform, was warmly received, and spoke as follows:

Mr. President and Delegates of the Illinois State Medical Society: I am exceedingly grateful to you for this opportunity. If I say anything to you it will not be new except so often we have to repeat old things for fear we may forget the essential principles because they are old.

Why should we teach sex hygiene? You are all familiar with and know of the existence of venereal disease or diseases. They are as old as the hills. Nevertheless they are prevalent, and we should not be afraid to meet the facts, and we frequently try to remove all of the obstacles that are in our way. Venereal diseases have existed for ages and ages, and now we are determined to see what we can actually do to limit the spread of the prevalence of them. As physicians I do not need to tell you about facts with which you are all familiar. The existence of gonorrhea is exceedingly prevalent. In a city like New York there are at least 100,000 cases of gonorrhea. It is a contagious disease. It is latent. It can be transmitted after a person apparently thinks he is well, and consequently the disease is transmitted to a great many of the innocent mothers of this nation and of other nations. It brings before us a very important social question. As long as venereal diseases are prevalent among the lower class of prostitutes, and it is an important question, they, after all, have a right to decide for themselves what they are going to do with their bodies and how they shall suffer as a result of that; but yet when it comes to hundreds of thousands of people in the best homes in the city and in the world, it is a different question. It is strange that we as physicians, although we have been familiar with the existence of these diseases, have never taken an active part in this work until recently. We simply forget

or we have been silent so long and have not done our duty to the community. We have not spoken much because we have not realized what we really could accomplish. Now, apparently, the path is plain before us, and one of the most important things is education. As you know perfectly well, it is a contagious disease. It is transmitted in the same way as other contagious diseases. The question is this, are not the innocent women of this land and other lands to be protected from this contagion by the best men in the world? I think such men will say yes. They have not seen the way, but we are beginning to realize that there is one way and that is by educating the men and women as to the danger of these diseases. You will probably say, as a great many people say, when you realize danger do you always avoid it? You may avoid it sometimes, but not always.

One other important thing is this: If a man pays the penalty of contracting a contagious disease and is inconvenienced as a result of it, he suffers the consequence of his own action. But has he any right to bring disease to his innocent wife, and does he want to do it? There is not one man in a thousand who would knowingly transmit disease to his wife. We must protect the men as well as the women. Gonorrhea is not as innocent a disease as most men have been led to suppose. The gynecologist knows better. The men who treat these diseases know better. It is not the innocent disease that we have been led to believe it is. It is a serious thing. This inflammation as well as other inflammations are to be seriously considered. These diseases result in a diminution of the race. At least 20 per cent. of the cases of sterility can be traced to them. Half of the operations performed on innocent women can be traced to venereal diseases. Twenty per cent. of all the blind in the world have become blind through these diseases. Avoidable blindness can be traced to them. The question before you, knowing all these things, is shall we sit back and do nothing? The women's clubs are very active in these matters. The women have a little more leisure and a little less fear, and in this country especially there is a tremendous movement among the women in the different clubs to enlighten the women and men in regard to these diseases. So the Federation of Women's Clubs, 800,000 women strong, have appointed a committee with a view to considering this subject, and they have decided to do away with this excessive ignorance which was called modesty in the past in dealing with these diseases and to face the situation as it is, and try to protect the innocent women and children. They have organized and have had committees appointed all over the country. Women physicians and men physicians are asked to give lectures to men and women, to boys and girls, as to the dangers of these diseases, so that they will receive the right information on this subject. As a medical teacher I find that men are far more ignorant on the subject of sex than women. The men think all kinds of things that are not true, simply because no one has given them better instruction. If you want as physicians to hold up your heads and keep up the reputation of your noble profession, you must do more than you have done in the past along the lines of preventive medicine. You know what is right. You have

always known what is right, and it is up to you to tell people what they want to know. It is up to physicians to do their duty. If you adopt these resolutions, it will probably be the first society in the country or even in the world that stands for the proper education on sex dangers to the young men and young women.

Not long ago I had the opportunity to talk to 500 students at the University of Chicago, young men and women, and with great eagerness they listened to everything I said to them on the subject of sex hygiene. It shows, after all, if we try to put ourselves in the right attitude, we can face almost anything. If you do not keep up your reputation as great leaders in the world, you will go down. It is for you to lead the world. The women are wide awake and are demanding a proper attitude on the part of the physicians with respect to this subject. We find it difficult to get the right viewpoint, yet you as physicians can do far more good than ministers. People will listen to you because they think you know. You ought to know what is right, and if you live up to the best that is in you, you can guide the world in this as in other things.

In the city of Chicago the Board of Education has already granted a certain amount of money to teach sex education to the parents, and other cities are considering the matter of having it taught in the schools, and the time is coming very fast when all of you will be asked to make your contributions to this subject.

I thank you very much for giving me this opportunity to speak before you, and I hope this particular resolution I am interested in will be adopted. You, gentlemen, are in a position to give the right instruction in regard to these subjects. (Applause.)

The President then put the motion to adopt the report and declared it carried unanimously.

Dr. L. C. Taylor, Springfield, Chairman, read the report of the Committee on Medical Legislation:

REPORT OF COMMITTEE ON MEDICAL LEGISLATION

The bill appropriating \$60,000 annually for two years for the medical department of the University of Illinois was attacked by its opponents and carried to the Supreme Court, where a decision was rendered declaring the Act to have been passed in a manner contrary to the Constitution. This was because the amendments offered were not duly printed and submitted to the members of the General Assembly before action was taken.

Many other bills were passed in the same manner in the hurry of the closing hours of the session, but these measures have not as yet been subjected to judicial decision.

At the present called session of the legislature another bill was introduced providing for the establishment, by the University of Illinois, of a two-years preparatory medical course, consisting of instruction in chemistry, biology, etc., in lieu of the former bill and came to a vote in the senate, but failed to pass through lack of a constitutional majority. The bill, however, received four negative votes and doubtless could be passed at a regular session.

Your committee has adopted this year the same course pursued two years ago, of asking all candidates for the legislature to define their attitude in regard to laws dealing with irregular practitioners and we feel, from replies received, encouraged in the belief that the medical profession will continue to be consulted in regard to the regulation of medical affairs in the state.

We will again most respectfully request that members of the House of Delegates insist on the selection of active men to represent the component societies on the committee of medical legislation, in order that our campaign of education can be systematically continued.

Against fair and liberal medical practice acts, against efficient quarantine laws, against pure food and pure drug laws, there exists such a combined opposition made up of ignorance, religious fanaticism and avarice that it behooves the medical profession, instead of maintaining silence, to make an aggressive fight in opposition to this heterogeneous organization of malcontents which presumes to attack a self-denying, progressive and honorable profession in its attempt to promote the physical and mental welfare of the people.

The President: What will you do with the report?

Dr. William L. Noble: I move the adoption of the report

Dr. Robison: I second the motion.

The President: Carried. The next report will be by the Chairman of the Medico-Legal Committee. Dr. Harold N. Moyer, Chicago.

The Secretary: Dr. Moyer will not be here until Thursday, and will make his report at that time.

The President: We will now listen to the report of the Committee on Medical Education, Dr. E. Mammen, Chairman.

Dr. Mammen presented the following report:

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION

To the House of Delegates of the Illinois State Medical Society:

Gentlemen,—Your Committee on Medical Education beg to report for the year just closed, 1911-1912.

The duty of this committee is a threefold one:

First: To cooperate with the State Examining Board in matters pertaining to medical education.

Second: To make an annual report to the House of Delegates on the existing condition of medical education in the State.

Third: To cooperate with the Council on Education of the American Medical Association in the effort to elevate the Standard of Medical Education in the United States.

It will thus be seen at once that no small task is imposed. The field to be covered is large and in part difficult of access so that we can bring before you only fragments of what we should be pleased to bring, were our time, our opportunities and our abilities greater.

Under date of Nov. 28, 1911, the chairman received from Dr. G. W. Webster, president of the State Board of Health, a letter which said among other things: "The State Board of Health will be pleased at any time to meet the Committee on Education of the Illinois State Medical Society to discuss matters pertaining to medical colleges and medical education in this state.

"I would be pleased to receive from you, any suggestions looking to the raising or improvement of either entrance requirements or medical standards in the state."

In compliance with this invitation a letter was addressed to Secretary Dr. J. A. Egan asking for suggestions as to the manner in which this committee might be useful in cooperating with said board. To this also a courteous reply was received. The manner in which such cooperation is to take place and to be made practically useful was not pointed out. In fact the question as to how and what and when is pertinent still before the committee. Except in an advisory capacity, when such advice might be sought by the State Board of Health, this committee does not exactly see what can be done to aid the operations of a body which is controlled by the law of the State and limited in its activity by statutory enactment, and by decisions of the Supreme Court.

The following correspondence further explains the situation (giving Dr. Egan's view):

BLOOMINGTON, ILL., Jan. 11, 1912.

Dr. James A. Egan, Springfield, Ill.

Dear Doctor.—The Constitution of the State Medical Society, Page 9, Section 7, makes it incumbent upon the Committee on Medical Education to cooperate with the State Examining Board in matters pertaining to medical education. Kindly inform this committee as soon as possible, of your view as to how such cooperation can be entered into, and be made useful.

Very truly yours, E. MAMMEN, Chairman.

The following reply was received:

SPRINGFIELD, ILL., Feb. 12, 1912.

Dr. E. Mammen, Chairman, Committee on Medical Education, Illinois State Medical Society, Bloomington, Illinois.

My Dear Doctor.—My attention was called to-day to your letter of the 8th and Mr. Sawyer's reply of yesterday. This brought to my attention the fact that I had not yet written you with regard to my views as requested in your letter of January 11.

In this matter of cooperation with the State Board of Health, it would seem to me that the first thing the Committee on Medical Education should do is to become thoroughly acquainted with the powers and limitations of the Illinois State Board of Health, as laid down in the act to regulate the practice of medicine in the state, and the various Supreme Court decisions bearing not only on the medical practice act, but analogous acts. As an example of the latter, I might refer to the case of *People ex rel, Isaac N. Sheppard vs. Illinois State Board of Dental Examiners* (110 Ill., 180), and the *Illinois State Board of Dental Examiners vs. the People ex rel John M. Cooper* (123 Ill., 241). Doubtless, you know of all the decisions concerning the medical practice act *per se*.

The next step that the committee should take, in my opinion, would be to become familiar with the schedule of minimum requirements adopted by the Illinois State Board of Health and those adopted by other states. I see, however, from your letter answered by Mr. Sawyer, you are now working on these lines.

I would suggest, in this connection, that special attention be devoted to the requirements of those states which attempt to enforce their requirements, for example, New York, Ohio, Michigan and Indiana. It is unnecessary to say there is considerable difference between paper requirements, and those which are put into actual practice. It is very easy for a state board to say that a man shall present evidence of the equivalent of a high school education. It is another matter to put this requirement into practice.

I should think after the different schedules have been obtained, the committee should make comparisons to discover the weakness, if there be any, of those in Illinois, and to other states in comparison, as it were.

I think it would be proper for the committee to make an investigation of several schools, say in those states adjoining Illinois, where great travel would not be required. Take for example, Missouri, Iowa, Michigan and Kentucky. It is not necessary however, to visit all these states, nor to inspect each and every college in the states visited.

After this has been done, I think the committee would do well to visit, or rather make an inspection, of some of the Illinois schools, spending at least a half day in each institution, and visiting every department, paying particular attention to the evidence of preliminary education presented by the students, which by the same token, should be done when the colleges of other states are inspected.

After all these things have been done, your committee will be in a position to intelligently cooperate with the Illinois State Board of Health, and such cooperation can consist of advice and suggestions to the Board, which I have no hesitancy in assuring you will be appreciated by the entire board.

I have dictated this letter very hastily, but I trust I have made myself clear to you. I realize that I have imposed on you a very burdensome task, but I think you will appreciate that not until this is accomplished, will your committee be able to speak authoritatively upon medical education in the State of Illinois. With kindest regards,

Very sincerely yours, J. A. EGAN.

We leave it to you, the House of Delegates of the Illinois State Medical Society to judge of the qualifications of your committee and of its work. We were unable to do all that is here suggested. We did not inspect the medical colleges of adjoining states, nor those of our own state. That work is in the hands of a commission, appointed by the Chicago Medical Society. The points of contact between the Illinois State Medical Society and the Board of Health should be clearly defined by both parties interested—in fact should first be set forth by the board itself, in such manner that in future the committee on Medical Education may be of real service in doing the work allotted to it.

Your committee did not visit neighboring states in its efforts at comparisons, but correspondence with the secretaries of the various examining boards reveals our relative standing, as well as the status of medical education in those states.

The following letter was addressed to the Secretaries of the States of Wisconsin, Michigan, Indiana, Ohio, Pennsylvania, New York, Kentucky, Missouri and Iowa.

Replies were received to nearly all, and these are attached to this report.

BLOOMINGTON, ILL.

Secretary State Board of Health, Des Moines, Ia., and other States.

Dear Doctor.—Our committee desires to learn something of the attitude of your board toward the medical colleges in our state, all of which are located in Chicago. Also as to the relations of your board with our State Board of Health in matters of reciprocity. To what extent does your board recognize the certificates of our board? Are all of the medical colleges of our state recognized by your board? What is your standard of recognition of a medical college?

Will you kindly reply and enclose a copy of the Medical Practice act of your state as now in force?

Our committee desires to acquire data so as to formulate an intelligent report at the next meeting of our society.

Thanking you, I am,

Very truly yours, E. MAMMEN, Chairman.

BLOOMINGTON, ILL., Feb. 8, 1912.

Dr. James A. Egan, Springfield, Ill.

Dear Sir.—I have received from the secretaries of several adjoining state boards of health, pamphlets on the "Minimum Requirements for Medical Colleges and Medical Students to be Accounted in Good Standing." No doubt you also have such a pamphlet or such printed matter. Kindly send me copy.

Having several of these pamphlets, I enclose one which I received from Indiana. This will explain more clearly what I mean.

Kindly favor me.

Very truly yours, E. MAMMEN, Chairman.

In reply to this letter, Dr. Egan sent a copy of "Schedule of Minimum Requirements," dated 1902; revised to October, 1907.

Your committee would further report that it is their belief, as a result of observation and conference with competent workers in this field, especially with the Council on Education of the A. M. A., that every student should have such thorough preparation on entering the medical profession as the advances of modern science demand. In this respect, Illinois should be in the lead of other states, and not behind them. Our people are entitled to the best of service that the best educated medical men are able to furnish. After this year no man should be admitted to the study of medicine in Illinois until he has fully,

fairly and honestly met the college entrance requirements as now fixed by law. Hereafter he should be required to add one year of preparation for medical work proper, in the sciences of Physiology, Chemistry and Biology. After this, he should be required to take a full four year's course in a properly equipped medical college having a competent corps of instructors and officers, also proper laboratory and clinical facilities. To finish he should have one year's clinical experience in a modern hospital. Nothing short of this will meet the demands of the progressing development of medical practice and research.

It is evident to your committee that nothing so much promotes the cause of medical education as the establishing of confidence between the rank and file of our profession and its legal executive officers. There should be no evasions of law, no construction of statutes upon technicalities, but, instead, a conscientious application of the intent and spirit of the law, without fear or favor, in harmony with the spirit of our profession.

It is gratifying to note that examinations of candidates for licensure are conducted with greater care than formerly, and, so far as your committee is able to see, with absolute fairness. The percentage of failures seems to be on the increase. This fact is not due to a poorer class of candidates, but to closer inquiry into their fitness. The failure of many is a powerful incentive to students to prepare more thoroughly and to choose for their Alma Mater such colleges as possess the best equipment and furnish the most thorough course of instruction.

There are at present, within the boundaries of this state eight medical colleges—all located in Chicago. These have been classified by the Committee on Education of the American Medical Association and by others. They are not all recognized as acceptable medical colleges by the State Board of Health. Careful work is to be done by the Commission on Education of the Council of the Chicago Medical Society. Your committee was invited to join this work, and repeatedly met with the commission and took part in its discussions.

The solution of these questions is intimately associated with the question, "What shall constitute an acceptable medical college." The standing of such a college is not fixed by statute, but is determined by the judgment of the State Board of Health. In fixing a standard, justice and fairness should be extended, but it is plainly readable on the horoscope of time and progress that a firm stand must be taken in favor of the best equipped and best manned. There should be a reduction in number, and the fittest only should survive.

In this connection, it should be stated that the State Board of Health has no jurisdiction over any medical college unless such college applies for recognition. Thus all schools which teach non-drug-using pathies, and which teach fads, faiths and isms are exempt, except as to the permission of their graduates to practice under licensure. To remedy this deplorable state of affairs, more effective legislation is urgently needed.

It was decided by the commission of the Chicago Medical Society to thoroughly inspect each recognized college, by men who are especially fitted to pass judgment upon the departments they are appointed to inspect. Their final report will be awaited with interest. We have appended to this report full minutes of all that this commission has done to date. The results of this work will in the end be most valuable to the cause of medical education in Illinois, and will go far toward making of Chicago a center for medical instruction and achievement second to none in the world. When we consider the number and rank of its instructors, the high skill of its practitioners, its enormous clinical material, the progressive spirit of its men, we feel justified in assuming that Chicago will in the near future assume this rank.

We are in possession of evidence that a medical college or colleges are about to be organized to be located in the city of Chicago, whose professorships are based solely upon the money invested by each, regardless of all other qualifications. Your committee would recommend to the State Board of Health that it refuse recognition to such a school.

The time has come when no college which is the property of its professors and dependent upon students' fees alone should continue to exist.

Your committee observes that quackery, fraud and fake methods of all kinds flourish within the state in regard to the treatment of human ailments. This is partly due to a lack of enforcement of law, partly to an absence of law, and in large part to faulty common school education. The curriculum of our schools is devoid of proper instruction to the young on this important subject. To promote intelligent care of the sick, as well as to promote prophylaxis of disease, and to institute thorough preventive measures in every community, the state should teach the futility and fraud of all kinds of nostrums and fakes. By means of our common schools the value of scientific medicine and hygiene should be impressed. We believe that such instruction would be of the highest value in the way of promoting longevity and physical well being, as well as in the saving for better use large sums now expended on nostrums, fakes and quackery.

During the year members of our profession in all parts of the state have been active by lectures, addresses and newspaper articles, in disseminating valuable information among the people. It is gratifying to note that some of the best daily papers and other publications have eliminated objectionable material from their columns, and are editorially and otherwise propagating truth in regard to the relations of health and disease. This is already bearing fruit in diminishing mortality and increasing longevity. It is also bearing fruit in its promotion of more intelligent use of timely and proper remedial agencies administered by intelligent hands.

"In spite of sneers from enemies and cheapening shrugs of friends," we still believe in the "one door" entrance to the medical profession—a non-sectarian profession, that is broad enough and liberal enough to be inclusive of all common sense and scientific methods of practicing the healing arts—not "one for the blankopath and one for the physician."

We recommend dissemination of medical knowledge to the public in so far as it will encourage the prevention of disease, a valuable factor in the economies of the commonwealth.

Your committee recommends the establishment of a medical department of the State University. Through this our common great educational institution, the state may and should have control over that part of education which has preeminently to do with the conservation of human life. We believe that it is of the greatest economic and human value to place medical education on the highest level—not below that of the best training in any other scientific vocation or profession. The state has power and authority to do this, and should not hesitate to assume its proper function.

E. W. RYERSON.

E. P. SLOAN.

E. MAMMEN, Chairman.

The President: What will you do with this report?

Dr. J. H. Rice: I move the report be received and adopted.

Motion seconded and carried unanimously.

REPORT OF COMMISSION ON MEDICAL EDUCATION CHICAGO MEDICAL SOCIETY

The Chicago Medical Society Council Commission on Medical Education was authorized by a unanimous adoption of a resolution at the November meeting of the council of that society. There were originally appointed eighteen (18) men, which included one from each of the teaching faculties of the eight Chicago medical schools, which are recognized by the State Board of Health, namely, Rush Medical, Northwestern, P. & S., Chicago College of Medicine and Surgery (Valparaiso), Bennett Medical College (Loyola University), Jenner, Hering and Hahnemann. The Commission met and organized, A. M. Corwin chairman, Clifford Mitchell, of Hahnemann, secretary. Frequent sessions have been held. Prominent laboratory teachers, the deans of the several medical colleges and others have addressed its meetings and joined in its conferences. The State Board of Health,

the Legislative Committee of the State Society, the Committee on Medical Education of the State Society and the Public Relations Committee of the Chicago Medical Society, as provided by the resolution, have also been invited to take part in the discussions. Drs. Taylor, Webster and Mammen in particular have given their cooperation and attended many meetings.

The following plan has been carefully and thoughtfully worked out for the prosecution of the work of this commission, work that is second to none in its importance. The commission has been enlarged to a present membership of fifty, twenty-four of whom are upon the teaching faculties, three from each of the schools mentioned. The other twenty-six men from the profession at large in Chicago efficiently balance the body, so that its work and results cannot savor of whitewash upon the one hand or unfair and unfavorable prejudice on the other. The commission has been divided into sub-committees, each of which has been formed by groups of men largely selected because of their special work. These sub-committees are to inspect the medical schools, each confining its attention to the particular branches with which its members are most familiar. The following are the subjects of these committees:

1. Physical Properties, Finances, Control, Admission Requirements, etc.
2. Pathology and Bacteriology.
3. Surgery and Genito-Urinary Diseases.
4. Gynecology and Obstetrics.
5. Anatomy.
6. Physiology, Pharmacology, Therapeutics, etc.
7. Medicine in Its Various Branches.
8. Eye, Ear, Nose and Throat.

The association of faculty members and non-faculty members enables the commission to avail itself of the pedagogic experience of the former, and the unbiased effort of the latter and the association of representatives from the various institutions concerned is bringing them together as they never have been before in the work of studying medical education. The committee having to do with physical properties and admission requirements is made up wholly of non-faculty men. No faculty member will serve on his sub-committee during the inspection of his own school.

Much attention has been given to the working out of a uniform, but comprehensive, schedule which shall be a guide to all the sub-committees in their inspection, except committee 1 dealing with the Physical Properties, etc., which has a special plan to follow. These two schedules are herewith submitted. It is evident, from even a superficial study of these and the purpose of the commission to find the facts, that the work cannot be done by these busy men in active practice in a week, but *must needs cover several months*, including the fall season, when the colleges are in most active session. The aim is to ascertain and put on record what each department in the several schools is actually doing in the preparation of students, be it excellent, fair, mediocre or entirely negative. Upon the basis of such facts alone can sound conclusions be drawn and wise recommendations be made. It is certain that all the institutions interested must receive great benefit in their several departments by their careful study of the others. It is interesting to observe that a desire for improvement of the situation is manifest in the attitude and spirit of the members of this commission. It should be further stated that the local members in Chicago of the A. M. A. Council on Medical Education are in hearty accord with this movement.

A ninth sub-committee, made up of Dr. George Webster of the State Board of Health, Dr. Taylor, of our Legislative Committee, Dr. Ryerson of the State Educational Committee and Dr. Whalen of the Public Relations Committee of the Chicago Medical Society, together with Drs. Corwin and Mitchell, has in hand the question of our Practice Act. The questionnaire which this committee has widely sent out to the members of the Regular, Homeopathic and Eclectic Societies aims to put into the hands of this committee as wide an expression as possible with regard to our present laws and their enforcement. The answers to this question-

naire must be of great value to the committee in making its recommendations. A report of this sub-committee is contemplated at as early a date as possible, in order to enable the state society to organize and bring to bear its influence upon the next legislature if amendments to our present laws are deemed advisable. The chairman of the commission in a paper published in the March issue of the ILLINOIS MEDICAL JOURNAL has summarized the scope of medical education as follows:

A. Sources of medical education.

1. Positive.

a. Undergraduate.

1. Medical schools and colleges.

Curriculum.

Preliminary requirement.

Hospital year—intern.

2. Preceptors.

b. Postgraduate.

1. Schools.

2. Hospitals, public and private (the abuse of medical charity).

3. Dispensaries, public and private (the abuse of medical charity).

4. Schools for nurses.

5. Private and public laboratories.

6. Medical libraries.

7. Medical societies.

8. The practitioner himself.

9. Medical journals.

10. The lay press (too often negative).

11. Negative sources of medical education:

Quacks, faith and fake healers.

Druggists in the sale of patent medicines.

B. Control of medical education through practice acts.

Licensure.

Regulation of practice.

Interstate standardization. Reciprocity.

To take up the problem of irregular practitioners a special committee has also been formed by the provisions of a resolution offered by Dr. Corwin in his report to the council in April. This sub-committee is formed of two members of the Chicago Dental Society, Chicago Homeopathic Society, the Eclectic Society and the Chicago Medical Society, and will take up a study of the practice and character of irregulars and especially their connection with the newspapers as advertisers and various commercial agencies which tend to degrade the standing and reputation and the efficiency of our organized profession. A careful study of the facts and strong recommendations endorsed by these several branches, of what is really one profession and should stand together upon this common ground, should exert a powerful influence upon the press in this connection.

Finally, and in brief, the whole subject of the betterment of the condition of medical training and medical practice in Illinois is one upon which all members of our society should unite without question and without allowing medical politics, or any other prejudicial influence to divide our efforts for much needed reform. It is high time for all progressive, high-minded physicians to unite in an earnest effort to put out of business dealers in patent nostrums, the low-grade journals that cater to them, diploma mills, itinerant vendors and quacks, and all other common enemies of the profession and the people.

A. M. CORWIN, M.D., 15 East Washington Street.

The President: The next in order is the report of the secretary.

Secretary Weis presented his report as follows:

SECRETARY'S REPORT

To the House of Delegates Illinois State Medical Society:

Your secretary begs leave to present the following as his report of a part of the work done by him during the year. The following is a financial statement of moneys received from all sources from May 1, 1911, to May 1, 1912, both inclusive. (In last year's report, owing to a typographical error, my financial report was made to read from May 1, 1910, to April 13, 1911, both inclusive; it should have been to and including May 1, 1911.)

Adams	\$ 165.00	McDonough	82.50
Alexander	39.00	McHenry	60.00
Bond	24.00	McLean	170.25
Boone	90.00	Macon	159.00
Browne	34.50	Macoupin	86.00
Bureau	129.00	Madison	222.50
Calhoun	17.50	Marion	59.00
Carroll	56.00	Marshall-Putnam	25.00
Cass	35.00	Mason	40.00
Champaign	121.50	Massac .....	.....
Christian	77.50	Menard	39.00
Clark	46.50	Mercer	35.00
Clay	17.50	Monroe	32.50
Clinton	42.50	Montgomery	68.50
Coles	69.00	Morgan	82.50
Cook .....	.....	Moultrie	28.00
Crawford	62.50	Ogle	40.00
Cumberland	18.00	Peoria	122.50
DeKalb	37.50	Perry	37.50
Dewitt .....	.....	Piatt	30.00
Douglas	105.50	Pike	82.50
Edgar	48.00	Pope .....	.....
Edwards .....	.....	Pulaski	15.00
Effingham	83.00	Randolph	60.00
Fayette	32.00	Riehlend .....	.....
Franklin	2.50	Rock Island	126.25
Fulton	127.50	St. Clair	203.00
Gallatin	25.00	Saline .....	.....
Greene	70.00	Sangamon	367.00
Grundy .....	.....	Schuyler	15.00
Hamilton	17.50	Scott	22.50
Hancock	5.00	Shelby	48.00
Hardin .....	.....	Stark	22.50
Henderson	26.50	Stephenson	134.00
Henry	95.00	Tazewell	62.50
Iroquois-Ford	105.50	Union	41.50
Jackson	62.50	Vermilion	356.00
Jasper	35.00	Wabash	42.50
Jefferson	44.50	Warren	62.50
Jersey	4.00	Washington	36.00
Jo Daviess	48.00	Wayne	32.50
Johnson	12.00	White .....	.....
Kane	217.50	Whiteside	66.50
Kankakee	82.50	Will	157.00
Kendall	15.00	Williamson	17.50
Knox	141.25	Winnebago	177.50
Lake	98.00	Woodford	52.50
LaSalle .....	.....	Subscription	39.50
Lawrence	57.50	Advertising	20.00
Lee	52.50	Committee on Arrangements	633.45
Livingston	94.50		
Logan	36.50		\$7,139.70

The above does not include the per capita tax of the Chicago Medical Society. The Chicago Medical Society tendered me \$4.610 which, upon order of the Council, was returned for correction. In the above list you will notice that the Counties

of Edwards, Dewitt, Grundy, Hardin, LaSalle, Massac, Pope, Richland, Saline and White have no credits. Of these Dewitt, Edwards, Grundy, LaSalle, Massac, Richland and White counties are in good standing, having paid their per capita tax for 1911 prior to last report. They have also made their report to the secretary before April 15, 1912. There are only three counties that stand suspended, Hardin, Pope and Saline, Johnson County having made good since last year; the total membership of the three suspended counties being twenty-nine members. There are some physicians residing in these suspended counties who desire membership and because of the somnolent condition of their society they cannot acquire the same without going outside of their respective county. It certainly seems advisable that these counties ought to join with a contiguous county until such time arrives when they can maintain an independent society.

The county secretaries complied with the usual request for an annual report on or before November 15 last. This report is made necessary for the correction of the roster and mailing list.

They again made their annual report prior to the first day of January giving such information that was desired by and necessary to the councilors.

In accordance with the dark and gloomy view I took last year of the increase of membership it would not have been surprising were this report to show a loss of membership for the year, but I am highly gratified to be able to state that our new members for the year were 308, reinstated 117, dropped as per order of the various secretaries 269 and there was removed by death thirty-three, which leaves a net gain of 123.

I wish to impress you with the knowledge that the Illinois State Medical Society is the second largest society in the United States, New York only holding a greater number.

Your secretary further begs leave to report that during the year he has attended every meeting of the Council and several committee meetings. At the last meeting of the Committee on the Regulation of Uniform Membership of the American Medical Association, of which your secretary is a member, the committee agreed upon a plan of uniform blanks, transfer cards and other items. The question of uniform blanks should be settled by this society at this time and if this House will make further inquiries by committee or otherwise, I will furnish the requisite data.

This office has not been called upon during the past year to furnish many lecturers. This is probably due to the fact that secretaries and the program committees have forgotten the existence of the lecture bureau. It seems to be the case in the majority of instances that special men are desired and these are procured through personal solicitation.

This office during the last fiscal year drew seventy-eight voucher checks on the treasurer to the amount of \$12,552.96. These, of course, were authorized to be drawn by the Council. This was audited with the treasurer's report by the Council at its January meeting and O.K.'d.

The correspondence work of this office has been greater than ever before and it is a pleasure to say that everything has been of a highly satisfactory character; the secretaries in the main being prompt and have carried on the work of their office with commendable celerity.

Respectfully submitted,

E. W. WEIS, Secretary.

The President: You have heard the report. What disposition do you wish to make of it?

Dr. Pettit: I move it be accepted and placed on file.

Motion seconded and carried.

Dr. A. C. Cotton: I beg the indulgence of the House of Delegates, although the hour is late, to present resolutions which bear on a subject

that has been touched on in four of the reports, namely, a medical department in the University of Illinois.

Dr. Cotton then presented the following resolutions and moved their adoption.

WHEREAS, The legislature of Illinois did at one time grant the sum of \$389,000 for the purpose of promoting the cause of medical education and research by enabling the University of Illinois to provide a suitable plant for its medical school, which appropriation was lost by the veto of the governor; and

WHEREAS, The legislature did at its last session appropriate the sum of \$60,000 per annum to the University for the support of its medical school, which sum was lost by a decision of the Supreme Court on a highly technical point; and

WHEREAS, On account of the failure of appropriation the University of Illinois has been compelled to close its medical school, greatly to the injury of the interests of public health and medical progress in this state; therefore, be it

Resolved, That the Illinois State Medical Society in convention assembled, representing 5,500 practicing physicians, do hereby express our deep regret that the legislature at its recent extra session did not re-appropriate the sums already granted to the University for the purposes of medical education, thereby dealing a serious blow to the interests of the greatest educational institution of the state and setting back for an indefinite period the interests of public health in this commonwealth; and, be it further

Resolved, That this society pledge itself to the support of the policy of adequate appropriations from the state treasury for the development by the State University of the work in public health, medical research and medical education; and, be it further

Resolved, That a standing committee, consisting of one from each county, be appointed, whose duty it shall be to urge upon public attention, upon the legislature, and upon the University authorities the necessity of making adequate provision for this great public need.

The motion was seconded by Dr. Robison and carried, and the resolutions were adopted.

Dr. J. W. Pettit: I wish to tender my resignation as councilor of the second district, and in doing so I want to say that my reasons are these: I have so many other duties of a private and public nature, and particularly public, to demand my time that it is impossible and has been during the past year for me to discharge the duties of my office as councilor as they should be, and I feel it is an injustice to the office for me to continue to hold it. I was elected to fill the unexpired term of Dr. Hunt, and expected to retire at the end of that period last year. At the election I was practically forcibly elected to the position. I fully determined at the time that at the end of this year I would resign.

I wish to thank this society for the many honors they have conferred on me from time to time, and to say that my interests in the society will not cease simply because I cease to be an official member of this body, but I will have to serve in the ranks rather than as an officer. I give you this notice so that you may select a councilor from my district.

Dr. A. M. Corwin: If it is necessary to accept the resignation, I move that it be accepted to take effect at the close of this meeting.

Motion seconded.

Dr. A. C. Cotton: I move to amend Dr. Corwin's motion to the effect that a vote of thanks and sincere appreciation be extended to Dr. Pettit

for the long and eminent service he has rendered to the Illinois State Medical Society. (Applause.) Many times without acrimony we have differed on some material points, but I know of no one who has ever accused Pettit of not being a patriotic member of the medical profession of this state and earnestly working to further the cause of medicine in Illinois, and I would like to see this House of Delegates vote a resolution of appreciation on the retirement of Dr. Pettit.

Dr. Corwin: I accept the amendment.

The original motion, with its amendment, was put and carried.

At this juncture the First Vice-President, Dr. J. A. MacDonald, took the chair, and President Newcomb read a brief report, as follows:

PRESIDENT'S REPORT TO THE HOUSE OF DELEGATES

To the House of Delegates of the Illinois State Medical Society:

Gentlemen:—In accordance with the requirements of the Constitution of the Illinois State Medical Society, I hereby submit my report for the past year. The reports of the various councilors show a healthy condition and good spirit pervading the medical profession. There has been very little change in the membership of the state organization during the year. There have been nineteen meetings attended by the president of the State Society during the year, exclusive of one state and two district societies.

From observations made during this year's work, your president has the following suggestions to make: That the number of sections for scientific business shall be increased from two to four. The reason for this is the belief that the present arrangement limits the program entirely too much, and makes no provision for the presentation of the work of several important specialties. It has been found advisable this year to add a section for Ophthalmology and Otology. The requirements of these members being of such urgent nature that the addition is almost obligatory and the program which they have presented indicates clearly the need for such a section. Repeated requests have been made during the year from different quarters to present articles on Sanitation, Hygiene and State Medicine and since work of this character is increasing daily in importance, it is believed to be advisable to add a section for these departments. An observation of other state societies leads me to suggest that Obstetrics and Gynecology should have a separate section. Nearly all general practitioners are especially interested in these lines, and would welcome a more extensive program of such papers. Another reason for urging an extension of the program is the complaint made by a good many of the best men in the state, that owing to the limited number of papers, many excellent writers are excluded from the program, thus limiting the amount of material for the State JOURNAL very appreciably, and should the State JOURNAL in the near future become a semi-monthly instead of a monthly publication, which seems at least quite probable, the extra material would be not only available but almost a necessity for its support.

In relation to the Constitution, two changes seem to be demanded by the conditions of the profession. The first is a change in the manner of election of the councilors. It is a matter of common observation in the House of Delegates that when the time for election of councilor arrives, there is frequently no one from the councilor district to even make the nomination and it is hardly to be expected that a member of the House of Delegates from another county or district might clearly express the wishes of another district than his own in making such nominations.

It has been found in late years in our national government, the principles of which are followed as nearly as possible in our organization, that it is desirable to elect State Senators whose position corresponds very closely to that of councilors in our organization by popular vote, their election to office representing more clearly by popular suffrage the choice of their constituents, and it is believed

that the councilors would more nearly represent the general professional requirements of their district if elected by popular ballot, on the same basis as other officers of the component societies. The canvas of the ballot and declaration might be left to the Council or it might be taken up by the Committee on Credentials at their first meeting prior to the general meeting.

Another change seemingly required by conditions which have arisen during the past year would seem to be a modification at least of Section 5 of Chapter 10 of the Constitution and By-Laws, relative to County Societies.

This section states in its first clause that each County Society shall judge of the qualifications of its own members. A statement which is misleading and which a study of the following sections will show is not intended. The wording of the first clause of Section 5 should be changed by introducing the word "largely."

The Committee on membership of the American Medical Association has evolved a plan to cover the transfer of membership of one county to another. The arrangement proposed by the committee seems to meet the requirements of the case and should be taken up at once by the House of Delegates as cases are likely to arise as they have during the year in which prompt action is imperative.

Several members have suggested a change on clearing up of Article 10 of the Constitution relative to funds and dues. This article states that "The amount of assessment shall be fixed by the House of Delegates, but shall not exceed the sum of \$2 per capita per annum except on four-fifths vote of the delegates present." While the last clause of Section 6, Article 9 of the By-Laws says, "Each member of the State Society shall be assessed \$1 a year for this fund alone—referring to the Medicolegal fund. This fund shall be paid along with other dues and through the same channels." A seeming conflict between our Constitution and By-Laws which should be corrected.

The Vice-President: You have heard the report of the President. What will you do with it?

Dr. Corwin: I move that we accept the suggestions of the President with regard to these amendments, and that this be a notice in order that we may act on them on Thursday.

Motion seconded.

Dr. Robison: I wish to amend the motion by moving that a committee be appointed to draft the proposed amendments and submit them to the delegates to-night, so that they may be acted on at the next meeting.

Motion seconded.

Dr. Corwin: I accept that.

Dr. Robison: Would it be sufficient if the proposed amendments were submitted on Thursday?

The Vice-President: I do not think it would, according to the Constitution.

Dr. Corwin: The spirit of these amendments has been submitted by the President, and about all the committee can do in drafting the proposed amendments is to change the verbiage.

The original motion, as amended, was put and carried.

On motion of Dr. Vanderslice the report of the President was accepted.

Secretary Weis presented a communication from the Secretary of the American Medical Association asking endorsement of the Owen bill by the House of Delegates.

Dr. Carl E. Black: I move that it be referred to the Committee on Public Policy with power to act.

Motion seconded by Dr. Pettit and carried.

The Chair appointed as a Committee on President's Report Drs. Cowin, Smith and Black to draft the proposed amendments.

The Secretary: The Chicago Medical Society labored under the impression that the dues for 1911 were \$2 by the action of the House of Delegates last year, but it was understood by some that it was not to go into effect until Jan. 1, 1912. As I stated in my report, I presented this matter to the Council and was instructed to return the check received from that society on that basis, and it was advised that the question be brought up in the House for final adjustment. It ought to be adjusted now, because that society stands ready to pay dues, whatever they are.

Dr. Charles C. O'Byrne: Can we hear the minutes of the House of Delegates of last year in reference to this matter?

The secretary read the minutes of the House of Delegates of last year bearing on the subject under discussion.

Dr. A. M. Harvey: I would like the secretary to read the motion and amendment without the discussion, as it is somewhat confusing.

Accordingly the secretary read the motion and amendment, leaving out the discussion.

Dr. John A. Robison: It is evident the amendment makes it \$2. When Dr. Black made his motion at the last meeting of the House, you will notice that he used the term "this year." The assessment for the year had already been made and paid, and I believe it was the belief of all members present that when he made the motion and used the expression "for this year" it meant the next per capita tax that would have to be paid by the different county societies. In the discussion a question was asked, and it was in brackets that I stated 1912; that was due to the fact that I had in mind at the time the next per capita assessment would be for paying dues for 1912. According to the explanation of the secretary the per capita tax of the Chicago Medical Society has always been one year behind, consequently we have not paid the 1911 tax; but it was the understanding of the members of the Chicago Medical Society that the motion was carried to make the per capita tax \$2, including \$1 for the Medico-Legal Fund, the amount for the year which the Chicago Medical Society owes to the Illinois State Medical Society. That is the reason why, when the amount of the per capita tax was made known, that the Board of Trustees issued a check for \$4,610. That check was issued in good faith. That check was not issued for the purpose of depriving the Illinois State Medical Society of one cent due it, and we still believe that our contention is right, namely, that all that was due the society was the \$2 per capita tax, including \$1 for the Medico-Legal Fund. As I have said, the check was sent to the secretary in good faith. The matter was placed before the council and they decided against us, and the check was returned. We tendered a check again to-day for \$4,610, believing that we are right in our contention. However, we are willing to leave this matter to the House of Delegates, and whatever the House of Delegates says goes with the Chicago Medical Society. If you

decide that we are in the wrong, we are willing to make up the extra 50 cents per capita. We leave it to you.

First Vice-President: Is it the desire to have the House of Delegates settle this discrepancy between the Chicago Medical Society and the Secretary or Councilors? There is no motion, or resolution before the house, and if a motion is put in tangible form it can be discussed.

Dr. Corwin: I move that the per capita tax for 1911, as shown in the minutes of the meeting at Aurora, hold good for the Chicago Medical Society, and for all other county medical societies for 1911, the \$2 including the Medico-Legal Fund.

This motion was seconded by several.

A Delegate: I want to ask the secretary a question. Have all the county medical societies outside of Cook County paid \$2 for the year 1912?

The Secretary: They have paid \$2.50 for 1911.

A Delegate: But the Chicago Medical Society takes the position, as I understand it, that this \$2 is for the present year.

The Secretary: No, for 1911, the year past.

Dr. Munson: I would like to ask the secretary when the year 1911 terminated, as defined by Dr. Corwin.

The Secretary: Dec. 31, 1911

Dr. Munson: How many county medical societies, outside of Cook County, have paid their per capita tax up to January, 1912?

The Secretary: All of them, I think, outside of Cook County, have paid \$2.50.

Dr. Munson: There have been no dues paid for 1912?

The Secretary: Oh, yes, quite a number have paid.

Dr. Munson: My understanding is that the society's dues are due on the 1st of January of each year.

The Secretary: They are due and payable on the first day of each year.

Dr. Munson: Do I understand, Mr. Chairman, from the secretary, that the 1912 dues are paid, because the 1911 dues are not due until they are payable on the 1st of January, 1912? We do not pay in advance.

The Secretary: You are not paying in advance. Those who paid for 1912 paid \$2 on the construction of the minutes that the 1912 dues were \$2. The matter was construed or interpreted in that way, and I do not think the question of the number of dollars of the assessment or per capita tax was ever brought into question until it came up when the Chicago Medical Society presented its check.

Dr. Munson: What do you understand as paying in advance for 1912 dues?

The Secretary: Nobody is paying in advance. All societies can pay, and the dues are due and are payable from January 1 on for the entire year. Some of these societies have paid before this meeting. I have accepted \$2 from them.

Dr. Corwin: How many societies have paid for 1912?

The Secretary: I should say fifteen or twenty.

Dr. Corwin: When this motion was made and the amendment made, and the thing was unanimously agreed on that the dues should be \$2 *in toto*, it was understood by everybody in the House of Delegates that it covered the next payment. We all sat as delegates at Aurora having paid for 1910. That gave the delegates their seats in the house. We sit here to-night having paid our dues for 1911. We will sit somewhere else next year, paying our dues for 1912. Now, that resolution, therefore, covered dues collected by which you gentlemen sit in this house, not by which you sit in the next house. A dozen or fifteen of the component societies have already paid, that giving them seats in the next house, but the dues have been paid by which they sit here. We have passed that motion; it was legal; it is a part of our minutes, and if some of the societies have been taxed, or all societies have been taxed \$2.50 illegally, there is 50 cents coming back to these societies, and Cook County is within its right in paying what is asked of it by the motion made and carried at Aurora. That is all there is to it. If you want to adjust the matter by giving them credit on their next payment, well and good. But we are willing to have this matter decided by this House of Delegates. We feel that we should not be taxed this year more than \$2, that is, for 1911, by which we sit here now. We have already been seated.

A Delegate: Our secretary has no right to accept money from any society in advance.

Dr. Harvey: I move to amend that all county societies that have paid in the \$2.50 receive credit for the overpay on the 1912 dues.

Motion seconded.

Dr. McClellan: I was instructed by the secretary to begin the fiscal year January 1, and was asked to remit dues before the meeting this year. The Chicago Medical Society failed to remit their dues before this meeting.

Dr. Robison: No sir.

Dr. McClellan: Did you pay for 1911?

Dr. Corwin: Yes.

Dr. Black: This question of per capita tax is discussed frequently incidentally in the Council. The question of collections from societies has been a matter that has come before the Council at almost every meeting for a number of years. The Council is charged with the collection and expenditure of the funds of the society. It has always been the understanding of the Council, and there has never been any dissent from that understanding, that the per capita tax takes effect at the beginning of the following year from the time it is set, and that has been the uniform rule. In May, at the meeting, we set the per capita tax for the following year, and last year this house voted that the per capita tax for the next fiscal year, beginning Jan. 1, 1912, should be \$2. In May, 1911, this House of Delegates voted that the per capita tax for the fiscal year, beginning Jan. 1, 1911, should be \$2.50. The Council has based the expenditures of this society and has contracted obligations on that policy. I want to put before you the fact that this society has obligations to

meet, based on that \$2.50, and the Council has always understood that the per capita tax takes effect with the next fiscal year.

Dr. Corwin: One point of information. I would like to know how much is in the treasury right now. What are the annual expenses of the society approximately.

The Secretary: Twelve thousand dollars in round numbers.

Dr. Black: We have two unusual obligations, amounting to nearly a thousand dollars which have been contracted to be paid. As the Council looks at it, we, of course, expect to keep within the income, but we believe a society of this kind should always have one or two thousand, or \$5,000 on hand for any emergency that may arise. We have not a considerable amount of money on hand, nor in prospect. If you pay back to every county society the sum of 50 cents to some 3,000 members, there will be \$1,500 to be paid back. Without knowing exactly what the total of these expenditures of the society is to be for this year, I would say in general that our funds would not warrant us in paying back \$1,500.

Dr. McClellan: If Cook County feels like paying the \$2.50 per capita, we do not object to it as we need the money. (Laughter).

A Delegate: Cook County will pay the \$2.50. (Applause.)

A Delegate: I rise to a point of order. The only question which can change the action for 1911 is to reconsider the motion which the House of Delegates passed at that time, fixing the per capita tax, and that motion will only be made by a man who voted in the affirmative.

The Vice-President: It is too late to reconsider that motion. Your point of order is not well taken. No one who voted at the time gave notice that he would move to reconsider. It is too late to move to reconsider something that happened a year ago.

Dr. Galt: I move as a substitute, and it be so construed, that the 1911 per capita tax shall be \$2.50; that the per capita tax for 1912 shall be \$2, and that in 1913 the per capita tax shall be whatever the House of Delegates may determine.

Dr. Charles C. O'Byrne: Dr. Black has stated that the House of Delegates this year did not have the power to legislate for the coming year. Each House of Delegates legislates only for the year in which it is organized. This House of Delegates cannot fix the per capita tax for the coming year, but only for this year. We believed that we could fix the per capita tax at that time, which we did, for that year, and we had a right to legislate for that year. This House has not transacted its business in a businesslike way, it seems to me, from the beginning of this meeting. The minutes of the Aurora meeting were never adopted, as I understand it, and hence the action is not binding. The action of no body is binding until its minutes are adopted. They should have been adopted by this House of Delegates. Each house is complete in itself and legislates for each year.

Dr. D. G. Smith: In order to expedite matters, and that we may no longer multiply words, let me rehearse one little part of last year's transactions. When that motion was being made and was carried, I rose in that House of Delegates and asked when this per capita tax was to apply,

and the secretary shouted "next year," and there was a murmur through the whole audience as if I was far back in the woods and was asking something that was ridiculous, and it was so understood that it was not to take effect until next year. It seems to me, we are doing a good deal of talking for nothing. I believe the Cook County delegation are ready to pay. Our brother here has confessed that this delegation is one year in arrears, but it is really a year and three months in arrears.

Dr. Robison: You all do it.

Dr. Smith: No, we don't. I believe the Cook County delegation is eager to pay this money to the society inasmuch as they have not paid interest on it. (Laughter.) They have got the money. They say they have, and all the other societies have paid. The whole contention is whether you fellows are willing to pay this 50 cents per capita into the treasury for 1911. If you do, it will be all right. We will have more money. We will feel better, the House of Delegates can spend money, and eventually we will have a little surplus.

Dr. J. W. Pettit: I rise to second the substitute motion made by Dr. Galt. What we are called on to do is to interpret what is meant. Here is the Chicago Medical Society acting in perfect good faith, whose members come forward and say "Gentlemen, we understand the matter in this way." The Council says "we understand it another way," and they differ. There are honest differences of opinion, and after hearing this discussion any unprejudiced person would agree that there are reasonable differences of opinion in view of the way the motion was put, and all we are asked to do is to interpret this, and the Chicago Medical Society will be perfectly satisfied with our interpretation. Its members say that. It seems to me, the quickest way to dispose of the matter is to vote in the affirmative for the substitute motion, that we interpret this motion of 1912, and not as 1911, as the Chicago Medical Society says. If the majority of this House should vote in favor of the substitute, then Chicago will pay up. If the majority should vote in the negative, it will settle the question that they will not pay. Then, if that be the case, every society that has paid \$2.50 will have to have a refund. That is all there is to it, and why should we prolong an already too long discussion by still further confusing the matter.

At the conclusion of Dr. Pettit's remarks there were cries of Question! Question!

The Chair put the substitute motion offered by Dr. Galt and declared it carried.

Dr. Corwin: I move that the vote be made unanimous.

Motion seconded and carried.

Dr. Robison: I move the next time an assessment is made per capita, that the year be distinctly stated in the motion.

Seconded and carried.

Dr. Corwin: Your committee appointed to draft amendments suggested in the President's report now gives notice that on Thursday these amendments will be presented to the House of Delegates for action.

Dr. Smith: It is not legal, according to the Constitution, to offer these changes and vote on them on the same date.

Dr. Corwin: These amendments are embodied in the President's report, and a committee has been appointed to draft these amendments. I think it is legal to change the verbiage in them and bring them before the House Thursday morning for action, and notice has been given that this will be done on Thursday, when we will ask the House to either adopt, reject or modify the amendments. If necessary, I make that as a motion.

Seconded and carried.

Dr. Merlin Z. Albro: This procedure is entirely illegal. The society has done enough of that sort of thing to learn a lesson, and it is about time that we begin to do business in a legal manner.

On motion of Dr. Munson, the House of Delegates adjourned until Thursday, 8 a. m.

MAY 23, 1912 — SECOND MEETING

The House of Delegates met at 8:35 a. m. and was called to order by the President.

The Secretary called the roll.

The Secretary read the minutes of the previous meeting which were corrected and approved.

The election of officers being in order, the following officers were nominated and duly elected:

President-Elect, Dr. Charles J. Whalen, Chicago.

First Vice-President, Dr. S. E. Munson, Springfield.

Second Vice-President, Dr. W. H. Curtis, Wilmington.

Secretary, Dr. E. W. Weis, Ottawa.

Treasurer, Dr. A. J. Markley, Belvidere.

Councilors, Second District, Dr. J. A. Marshall, Pontiac; Third District, Dr. C. D. Pence, Chicago; Sixth District, Dr. Carl E. Black, Jacksonville; Ninth District, Dr. Frank C. Sibley, Carmi.

Delegates to the American Medical Association, Dr. George S. Rainey, Salem, to fill the unexpired term of Dr. Ferguson. The following delegates were elected for two years: Dr. A. L. Brittin, Athens; Dr. A. C. Cotton, Chicago; Dr. William L. Noble, Chicago; Dr. John A. Robison, Chicago; Dr. J. T. Montgomery, Charleston, and Dr. E. W. Feigenbaum, Edwardsville.

Alternate Delegates to the American Medical Association, Dr. C. L. Armstrong, Taylorville, Alternate for Dr. Rainey. The other alternates elected are Drs. Rufus J. Coultas, Mattoon; E. F. Baur, Chicago; A. S. Hanna, Peoria; K. A. Zurawski, Chicago; A. B. Middleton, Pontiac; and H. A. Millard, Minonk.

Committee on Public Policy, Dr. A. M. Harvey, Chicago, Chairman; Dr. Charles H. Parkes, Chicago, and Dr. Frank P. Norbury, Springfield.

Committee on Medical Legislation, Dr. L. C. Taylor, Chairman, Springfield; Dr. M. S. Marcy, Peoria, and Dr. J. V. Fowler, Chicago.

Committee on Medical Education, Dr. A. M. Corwin elected for three years.

The County Secretaries Conference reported having elected the following officers: President, Dr. E. W. Oliver, Peoria; Vice-President, E. B. Owens, Dixon; Secretary, Jennie Lyons, Champaign.

On motion of Dr. J. W. VanderSlice, these elections were concurred in by the House of Delegates.

Peoria was selected as the next place of meeting.

Dr. Black: I move the per capita tax for 1913 be \$1 as for the year 1912.

Dr. Harvey: I second the motion.

Dr. O'Byrne: That motion is out of order, for the reason that this house is incompetent to make an assessment for 1913. Each house completes its work and legislates for its year.

The President: The Chair will accept that as the law. The Chair rules that it is correct.

Dr. A. M. Corwin, Chairman of the Committee appointed to consider the recommendations of the President for amending the Constitution and By-Laws, presented the following report:

Your committee respectfully suggests that the following words "but shall not be a part of the per capita tax" be added after the word "channels" in the last line of the last paragraph of Section 6, Chapter 9, of the By-Laws, page 27, as meeting the president's recommendation. But the committee further recommends that owing to the fact that a number of amendments to the Constitution and By-Laws are pending before the House of Delegates, and others are considered advisable, the above suggestion and the whole matter of amendments be referred to a special committee of five to be appointed by the president, two from Cook County, and three from outside of Cook County, to consider and report at the next annual meeting of the House of Delegates, at its first session, said report to be acted upon at a special session to be announced by the president immediately after the report is presented.

It is further recommended that the said report of the committee of five be distributed at the first session in printed form.

(Signed) A. M. CORWIN.
D. G. SMITH.
CARL E. BLACK.

After reading the report, Dr. Corwin moved its adoption.

Motion seconded.

Dr. O'Byrne: I do not quite understand the report of the committee. The committee was given a definite thing to do in accordance with the recommendation of the President which they have failed to do.

Dr. Black: The gentleman will find in the report the words to be added in the By-Laws to make it conform to the recommendations of the President. We recommend that this matter be referred to a committee.

Dr. O'Byrne: I have no objection to referring it to a committee. This committee was given certain work to do and report, but they have gone beyond their field and have taken up a special order of business for this meeting. There were By-Laws postponed and made a special order. It seems to me, we should consider these proposed amendments to the By-Laws in order to clear the atmosphere. We all know what these By-Laws are, but we have not been able to pass on them, and never will be able to pass on them if we go on in this way. Why not take up the

amendments offered by Dr. Black and by Dr. Zurawski, either pass them or reject them, and appoint a Committee on Constitution and By-Laws, and refer to that committee anything that we wish to refer during the coming year.

Dr. Corwin: I do not think we ought to take up any amendments with a view to considering them, as we have not time to do so. The report provides for a special time.

There were cries of Question! Question!

The President then put the motion to adopt the report and declared it carried.

The President: I wish to name as the Committee on Revision of the Constitution and By-Laws, Dr. Carl E. Black, Chairman; Dr. E. W. Feigenbaum, Edwardsville; Dr. D. G. Smith, Dr. A. M. Harvey and Dr. William L. Noble.

Dr. Harvey: I wish to withdraw my name, Mr. President, from the committee in favor of some other gentleman, and I would suggest that you appoint Dr. O'Byrne.

Dr. O'Byrne was accordingly appointed a member of the committee in place of Dr. Harvey.

Dr. Harold N. Moyer, chairman, presented the report of the Medico-Legal Committee, as follows:

REPORT OF MEDICOLEGAL COMMITTEE

RECEIPTS

May 20, 1911, to May 20, 1912

Cheek, June 1, 1911, Dr. Everett Brown, Treasurer.....	\$2,000.00	
Cheek, January 2, 1912, Dr. Everett Brown, Treasurer....	2,000.00	
		<hr/>
Total.....		\$4,000.00

DISBURSEMENTS

May 20, 1911, to May 20, 1912

Overdrawn account, ending May 20, 1911.....		474.79
General counsel	\$1,785.62	
Attorneys' fees	1,135.50	
Stenographer	237.50	
Exchange	3.00	
Postage	4.00	
Books	6.00	
Stationery	7.50	
Mt. Vernon trip.....	67.00	
Typewriting .....	.50	
Secretary	25.00	
Court cost	292.35	
		<hr/>
		3,563.97
		<hr/>
		\$4,038.76
Overdrawn.....		38.76

In connection with the presentation of the report, Dr. Moyer made the following remarks: We have been hit. We have lost a malpractice suit and had to pay. That is the first one. The sum involved was \$100. It occurred after three trials, two mistrials, disagreements of the jury, and finally a verdict was brought against us for \$100. The judgment was not worth the paper on which it was

written, and I earnestly believe that if we had taken the case to the Appellate Court we could have reversed it to a certainty. As I have said, there were three trials, and the case extended over two years. I feel sore about this case because it breaks our record more than the small amount involved.

The other piece of interesting litigation is the Mammen case. I do not hesitate to refer to it by name, and the way Dr. Mammen has stood by the committee is worthy of commendation. The litigation has gone on for three years. We had three trials and got three judgments, namely, fifteen hundred dollars, twenty-five hundred dollars, and then fifteen hundred dollars. The last time in the Appellate Court a verdict was brought in of not guilty. The Appellate Court handed down a decision directing the lower court in its judgment that Dr. Mammen was not guilty. You remember the case involved was a sponge case. I cannot get these higher courts to take the same view I did in relation to malpractice suits. I wish we had stronger and abler men there. We certainly had a great law suit. We did business with them, and they filed a writ of certiorari from the findings of the Appellate Court and we beat them three weeks ago.

Another case that was settled involved some very interesting law points. As to whether the statute of limitations in this case is five years or two years is what was involved in that case. That was the assumpsit case I spoke of. They got judgment against us for \$750. I was anxious to give up on that, but there was a chance for the doctor to get out for \$300, and we could not control that. (Laughter.)

Another settlement was made for \$150. The two defendants, a railroad company and a doctor, created a complicated situation. There was a suit brought against the railroad company and against the doctor. The railroad company practically forced the doctor into paying \$150 as his part of the claim.

We have disposed in the last year of nineteen cases. Cases won, five; cases dismissed, six; cases reversed, three; verdict against defendant, one; two cases in which plaintiffs took a nonsuit, which is equivalent to a defeat. Cases settled, two, making a sum total of nineteen cases.

I want to say a word of two with reference to a matter which I brought before the Chicago Medical Society as to what you ought to do with this thing. I told you last year that I never approved exactly of this plan, and while it has run along very well, there is beginning to be a relative injustice in it. Men are being insured. This society is paying upward of \$50,000 a year for insurance, and you can imagine how profitable that is for the insurance companies to write these policies. You see what they got to pay out of this thing and what it costs them. Every once in a while a man's policy lapses, or if a man turns up who has not an insurance policy, of course, we defend him and pay the bill. If he has insurance the insurance company pays the bill, or we help to pay just the same. They come to us for advice and assistance and they get it, but they pay the bill generally, but we give them some assistance as if they were not insured and the insurance companies appreciate that. It seems regrettable to your chairman you do not do this on a mutual basis. The members of the society pay in ten dollars; most of you pay fifteen dollars to insurance companies. If you paid in ten dollars each in one fell swoop you would have \$40,000 in the treasury which would meet all demands and run the business for ten dollars, the interest paying all the expenses. You have got your organization and I would suggest to you this feasible way of aiding the organization and saving this large sum of money which you are paying out. You do not get anything except a large certificate with a seal on it and a green border on it. (Laughter.) Most of you never read what is in it. That I know, but it looks formidable. You do not get value received. It does not cost the insurance companies three dollars a year to take care of you and you pay them fifteen dollars. I have been in hopes from the experience I have had on this committee that we would finally land on something of that kind, some coherent plan of enabling the profession to save this large sum of money. I think it will soon reach \$70,000 that our members are paying to insurance companies. I am not advising the society to go into the insurance business, the life insurance business, for example, as that is a business that has

rather short term contracts, only for a year. It is practical to deal with this matter on a mutual basis, pay money into the state society and get the benefit of it. If you had paid in so much in the last five years you would have \$100,000 which you have paid to insurance companies. What are you going to do about it? I believe you ought to consider these things in a business-like manner. You have got all of the data you can possibly have from these files of mine. They are in perfect shape. A copy of every letter written is filed; every case is filed; every single paper is filed in the case, every legal paper in connection with the case, how it came out, and there are 228 cases to base data on as to what the results are. The matter can be analyzed and it is in perfect shape, and nearly 6 per cent. of the entire membership of this organization has been in touch with the Medico-legal Committee since it started.

Dr. Black: I move that the report be received and placed on file.
Motion seconded.

Dr. Robison: I would like to ask Dr. Moyer if the charter of the Illinois State Medical Society would permit us to carry on mutual insurance, or whether there would have to be another organization and a contract made between that organization and the Illinois State Medical Society?

Dr. Moyer: It is easy to get around any charter. (Laughter.) I think in a few days I could know how it could be accomplished.

The motion of Dr. Black was then put and carried.

Dr. C. B. King: I move, Mr. President, that a committee of three be appointed by the Chair, with Dr. Moyer as chairman, to work out a plan and bring it in at the next meeting of the House of Delegates at Peoria to protect the members of the Illinois State Medical Society against alleged malpractice suits.

Motion seconded and carried.

Dr. J. H. Stealy, Freeport, offered the following resolution with reference to Dr. Moyer and the Medico-Legal Committee:

WHEREAS, The Illinois State Medical Society has grown to be the second in size in the United States; and

WHEREAS, One of the principal features in its usefulness is the efficiency of its Medicolegal Committee; and

WHEREAS, Its achievements are directly due to the personal efforts, capability and diplomacy of Dr. Harold N. Moyer, the chairman, upon whose watchfulness and devotion we have depended until we have long since forgotten to appreciate its source; and

WHEREAS, This society owes to Dr. Moyer a debt of gratitude that cannot be estimated in intrinsic values; therefore, be it

Resolved, That it is the order of this House of Delegates that a committee of seven be appointed by the president, with power to act, whose duty it shall be to select a memento which shall be a fitting tribute to the esteem in which Dr. Moyer is held by the profession which he is serving with such unselfish purpose and zeal.

Dr. Black: I second the resolution. Carried unanimously.

Dr. A. M. Harvey, Chicago, Chairman, reported for the Committee on Public Policy in regard to Senate Bill No. 1, known as the Owen bill, and moved the adoption of the resolution and the concurrence of the House of Delegates in its recommendations.

Motion seconded and carried.

Dr. Noble: I move you, Mr. President, that the report of the Council of the Illinois State Medical Society, as submitted on the first day of the session, be received and adopted as read.

Motion seconded.

Dr. Black: The Council has not completed its report yet and we would like to complete it before it is acted on.

Dr. Noble: My motion was made with deliberation and forethought. In the supplementary report which is before us there are questions involving medical education which we might have some trouble in agreeing on.

Dr. Black: I rise to a question of personal privilege. The Council gave notice of completing its report before the House of Delegates adjourned, and we do not care to be denied that privilege. We would like a ruling on that question.

Dr. Noble: That is what my motion is about.

Dr. Black: I move we now hear the supplementary report of the Council.

Motion seconded.

Dr. Noble: Have I the floor or not, Mr. President? Can I finish my motion?

The President: You finish your motion.

Dr. Robison: I contend that Dr. Black's motion is out of order.

The President: Dr. Noble has the floor.

Dr. Noble: I move you, sir, that portion of the report of the Council of the Illinois State Medical Society as printed and before us entitled "Supplementary Report" be referred to the Committee on Medical Education of the Illinois State Medical Society with instructions to review the same and report at the next meeting of the House of Delegates on its approval or such parts of it as they may deem justifiable.

Motion seconded by several.

Dr. Corwin: I move to amend that this supplementary report be not printed in THE JOURNAL until it is acted on first by the House of Delegates.

Motion seconded.

Dr. Pettit: I rise to a point of order.

The President: State your point of order.

Dr. Pettit: This committee has made no report unless the house wants to accept this printed report as the report of the committee, and it is for the committee to request that —

Dr. Black: If I may speak to this matter, I think with all due respect to the Executive Committee of this body, which does the work throughout the whole year, and gives a great deal of time and attention to these questions, that it would be as little courtesy as this house can extend to hear the report of the Council. Last year, by the President of this body, we were absolutely denied the privilege of presenting to this body any report. Now, is the house going to deny its Executive Committee the privilege of presenting its report to this body? That is the first question before the house at this time, whether the Council is going to be given the privilege of reporting to this body. They were throttled last year

and the same elements are trying to throttle it again this year. I appeal to the delegates to know whether this is justice to your Executive Committee or not. (Applause.)

Dr. Cotton: I rise to a question of personal privilege. I have just seen this printed circular and addenda to the report that was presented by the Council at the last session, and as I glanced over it you may imagine my surprise at a statement it contained. I was about to call the attention of the Chairman of the Council to what I considered was a misprint, because he is a gentleman for whom I have the most profound respect. His ability is not questioned. His industry speaks for itself. We all know Dr. Black has ability and great industry, and we believe in his truthfulness. I might refer to one line. "Last year on account of some views held by our council regarding medical education we were not permitted by the presiding officer of the House of Delegates to present our annual report."

At the last meeting of the House of Delegates it was my painful duty to preside for a portion of the time. I was relieved in the latter part of the last session by the then Vice-President. This is the first time that my attention has ever been called to this matter as stated here as a fact that the Chair prevented the Council from making its report. I will state positively, and ask that the minutes be read to corroborate it, that while the President occupied the chair no such prevention was perpetrated. It would be a most outrageous, high-handed proceeding that a Chair could push over a democratic body like this. My attention was called to some statement in *THE JOURNAL* of this nature. I did not read it; it was read to me, but I took it as one of those editorial lapses of the memory that sometimes afflict editors, and medical editors are not exempt from them at times. I paid no attention to it, but to-day in a printed circular, distributed throughout this assembly by whose authority I know not —

Dr. Black: By mine.

Dr. Cotton (resuming): Attached to the report ordered printed I find a certain statement made, and on a question of personal privilege I will ask for the reading of the minutes on the point of what presiding officer perpetrated this outrage. May I have the minutes of last year? I ask the privilege of having the minutes read to corroborate the statement which permits this outrageous stigma of unfairness. I for one would vote to impeach a presiding officer who would presume to carry out such an undemocratic proceeding. (Hear! Hear!)

Dr. Noble: That is just the point at issue. It is almost impossible for this body to enter into an analysis of what transpired one year ago in the House of Delegates of this society. That is why I am asking to have the supplementary report referred to the Committee on Medical Education that the facts may be gathered and presented to us in the shortest possible time in an orderly and coherent manner at the next meeting of the house.

Dr. Black: I hold in my hand the supplementary report of the Council. I am still on the question of whether the Council has the privilege

of presenting its report. It has been duly considered by the Council; it has been unanimously adopted by the Council, and its chairman has been authorized and instructed to present it to this house. There seems to be a determination to prevent the Council from presenting its report this year. I only call attention to that in confirmation of my statement that the same tactics prevented the presentation of the report last year, and I appeal to the secretary for the minutes of last year to show in any place where the Council was given any privilege or at any time called on or given any opportunity to present its report to the house. I have in my hand the report, the supplementary report of the Council, and I again request the privilege in the name of the Council, the executive body of this society, to present the report to the House of Delegates. I am not saying what you think of it or what you will do with it. That is your business. If you expect to have an executive committee or council to do work in the interim, the least you can do for them is to give them the courtesy of presenting to the house their report.

Dr. Robison: We would like to have the minutes read to clear up the question as to whether such a thing was perpetrated or not.

The President: It would be impossible to do that because we have not the report.

Dr. O'Byrne: After Dr. Black's statement, it seems to me that an apology is due to Dr. Cotton. I have known Dr. Cotton for years. He is a square man. I am certain he would not overlook the report of any councilor purposely, and if the report was not called for, that is one thing; but to say that the report was prevented from being read is altogether another question. It is unfair to impeach Dr. Cotton's integrity, and I feel that an apology is due to Dr. Cotton on that ground.

Dr. Black: It was the duty of the President to call the attention of the house to the fact that the report of the Council had not been read, and then every mother's son would have heard the announcement.

A Delegate: Let us hear it read now.

Dr. O'Byrne: I still think that injustice has been done to Dr. Cotton to have the statement published broadcast that he prevented the report of the Council from being read when the report was not called for.

A Delegate: I move as a substitute that the Council present its report now.

Motion seconded.

Dr. Noble: I accept the substitute.

Dr. Cotton: It is too early to read and act on such a report in any manner whatever until the question of veracity be established. I have given Dr. Black credit for a slip of the pen. I do not believe he wilfully perpetrated a statement that is not true. The minutes should show if the chairman of a body like this took such a high-handed ruling as to prevent the reading of the report. I honestly expected to have heard the report as ex-officio member of the Council, because there were some things in the report I wished to discuss at that meeting. I left the chair purposely and called the Vice-President to the chair, and I do not know but what I told Dr. Black that I should like to take a fall out of his

report. We expected the report to come up, and that when it did I wanted to take the floor and make some remarks about certain portions of it. I fully expected it to come up, but, as I have said, I was called away from the Assembly Room by my wife who sat in the gallery, a question of family courtesies, and left the hall. I never heard a word from that day to this as to why the report was not presented. I do not believe any one within the sound of my voice doubts the words I have uttered. I cannot conceive why Dr. Black should have put it in this language to send broadcast through this house, through the great state of Illinois, that they allowed the President to use such arbitrary power as to prevent a report from being read of our most important standing committee, namely, the Council. I ask that this question of veracity be settled. The rights of a delegate are paramount to any other matter.

Dr. Black: As an ex-president of this society, it seems desirous and determined to force this matter simply into a question of veracity between myself and Dr. Cotton. I am perfectly willing that the House of Delegates should vote on that question now for a statement of facts.

A Delegate: Furnish the proof.

Dr. Black: No proof about it. It is simply my statement as against yours. There is nothing in the minutes —

The President: Your statement is rather extreme, doctor.

Dr. Black: My statement has been printed. It has been repeated before the Council. It has been endorsed by the Council. The statement is in the report. It is a part of the report, and endorsed by the Council of this society. I present the facts or what I know to be the facts. I sat on the front seat with the chairman a little to the left of the front. Several times I called his attention to the report of the Council; I called his attention to the fact that I was ready to present the report before certain other reports were presented. He said it would be called for. I accepted postponement. Finally, when I appealed to him again in the matter he said he wanted to discuss the report and wished I would find the Vice-President for him to preside during the time the report was presented. I sought the Vice-President; I did not find him, but I sought him at the request of the President. Now, I simply say I called the attention of the presiding officer not less than a half dozen times to the report of the Council and was put off with the statement which he has here confirmed, that he wished it postponed so that he could discuss it and have the Vice-President in the chair at the time. Gentlemen, that was never done. That is all I have to say about it. What the intentions of the presiding officer were, whether simply a neglect of duty as a presiding officer or an oversight, we have said in some way the Council was prevented from presenting its report last year, and an effort seems to be made to prevent the Council from presenting its report this year. I would not seek to deceive one delegate of this House of Delegates on any question of veracity. It is nothing to me. Personally, this is not my personal business. It is the business of the House of Delegates. If I am doing anything worth doing, I am serving the House of Delegates. I have no other expectation or intention in this society, and when it

comes to a point that I cannot serve the House of Delegates faithfully, my resignation is in your hands. If I am again prevented from presenting the report of the Council, I will have to take it as an expression from the house that my services are not desired.

Dr. Cotton: I accept for the House of Delegates the explanation offered by the Chairman of the Council. I leave it to every one here if he does not exonerate the chairman from preventing the presentation of the report last year. I am glad Dr. Black's memory is good on these points. He is a younger man than I am, and his memory is obviously better. It should be. He remembers that we had a conversation about it. He remembers I said when the report was to be presented I wanted to discuss it; that I asked him to find the Vice-President, and I have forgotten who it was. We were talking in a friendly manner, and it was for the obvious purpose of taking part in the discussion on it that I asked him to find the Vice-President, but he failed. The Second Vice-President loomed up and was called to the chair. I sat there waiting to hear from the report. I was called from the hall and did not know until long afterward that the report did not come up. It was not the intention so far as I know, for the Second Vice-President, Dr. Stubbs, to prevent the reading of the report, and you all know Dr. Black well enough — although he is a modest man — to know that he does not lack courage; that he can take care of himself and discharge the duties and shoulder the responsibilities of his committee. As he says, he wished to present the report, and I cannot conceive of any power except the unanimous disapproval of the house that would have prevented it from being presented. No officer in the chair could have prevented it being read. The word prevent means a great deal. I accept his explanation in exoneration of the charges that I prevented the report from being read. This is not a personal matter, but one of veracity that affects my honest intentions in governing a body.

Dr. Noble: Far be it from me to prevent anybody from reading a report. I would like to ask Dr. Black whether he considers his report, that is, the supplementary report in the printed sheet, is before the house or not? I want to know if Dr. Black considers the printing of this and circulating it in the house is not technically bringing the report before the house? I wish he could have the opportunity of reading this printed portion of the report entitled "Supplementary Report," so that technically we will have the whole report before the house.

Dr. Black then read the supplementary report of the Council.

Dr. Noble: I move you that the supplementary report of the Council be referred to the Committee on Medical Education of the Illinois State Medical Society for analysis and recommendations as to what portion shall be adopted or approved by the house at our next session.

Dr. Black: I second the motion.

Dr. Noble: Giving the members of the Council and the chairman due credit for their intentions for furthering the interests of higher medical education in the state, and for furthering the interests of medical education, where the medical profession is touched by the State Board of

Health, and giving them credit for everything which they have considered in the supplementary report, I must express my opinion that some of the language used in the report is unfortunate. I will refer, for instance, to this: "If the medical profession of the state is to be saved from further disgrace and humiliation by being dominated by mercenary interests, and committed to the policies to which our best interests are opposed, it must be done by the delegates who are not controlled by the interests which are opposed to higher and purer methods of medical education."

Mr. President, I contend that in my judgment there is no delegate sitting in the Illinois State Medical Society at this time, or who has sat in the Illinois State Medical Society during the last four years, who is dominated by any influence in this state which is opposed to higher medical education. (Applause.)

As to that portion of the report which considers any phase of the State Board of Health or the political fortunes of the republican nominee for governor, Charles S. Deneen, I have nothing to say. But I do believe that this supplementary report of our councilors in the interest of higher medical education, in the interest of harmony in the Illinois State Medical Society, should be placed in the hands of a committee like our Committee on Medical Education, which knows more about it and has the interest of higher medical education more at heart perhaps than any of us individual delegates, for their consideration and recommendation to us.

The motion was now put and declared carried.

Dr. Cotton: In view of the explanation of the chairman of the Council I want to move, as a matter of special personal privilege, which every member of this house is entitled to, that this inaccuracy which reflects on a member of your body, be now expunged from this report.

Motion seconded.

Dr. Black: In view of the explanation made by Dr. Cotton, it gives me great pleasure to second his motion. (Applause.)

Motion to expunge put and carried.

Dr. S. D. Ryman: We had before us last year a report from the Board of Medical Education in the schools of Chicago. Now, it is well for this body to have these reports; it is well for us to know what the real condition of medicine is in the state of Illinois, and we should have them given honestly and by an impartial committee. I do not believe that any harmony can be kept up in any body by the use of such language as is contained in the paragraph that has been expunged from this report, or the use of such language as the House of Delegates last year expunged from Dr. Percy's report. We get no harmony from anything of that kind. We get statements made occasionally through the state JOURNAL which are not conducive to harmony. We have to look at things in a fair, square and disinterested way.

Dr. Black: The Council has presented this matter to you in all fairness, and to test the views of the House of Delegates I wish to make this motion, that this supplementary report be not printed in the ILLINOIS MEDICAL JOURNAL until it is reported by the committee to which it was referred.

Motion seconded and carried.

Dr. O'Byrne: As a personal matter I do not think it would be wise to print what was said with reference to the seating of the delegate of the Adams County Medical Society. It should not be printed in the JOURNAL. It would be well for the editor of the JOURNAL not to print it. I make such a motion.

Motion seconded.

Dr. Rice: As a delegate from the Adams County Medical Society, we have no objection whatever to anybody knowing just exactly what has been done in Adams County. We have no objection whatever to what was done, and especially with reference to what was done by the Council.

Dr. Pettit: I rise to supplement that motion by saying if we are going to expunge anything, let us expunge everything we have done. If we are ashamed of anything, let us expunge everything we have done. When you begin to expunge from your record things that have actually occurred (I am not referring now to the personal matter between Dr. Black and Dr. Cotton), but matters of record —

Dr. Noble: There is no motion before the house, Mr. President.

Dr. Pettit: I do not believe it is a good idea to begin expunging matter from the JOURNAL. Let us know what the facts are. We all know what has taken place.

Dr. Black: Let the committee consider it before we publish it.

Dr. O'Byrne: I wish to renew my motion that we do not print in the JOURNAL that portion of the report of the Council referring to the delegate from Adams County.

There were cries of Question! Question!

A Delegate: Why not print this matter and place it in the hands of the delegates at the next meeting. Why not have sheets printed containing all such matters as this and place it in the hands of the delegates who are elected to attend this House. I move that as an amendment to the doctor's motion.

Motion seconded.

The Secretary: Do you mean, Dr. O'Byrne, the action of the House in seating the delegate from Adams County, or the appeal from the Adams County Medical Society to the Council?

Dr. O'Byrne: The report of the Council which referred to it.

Dr. Percy: There is another side to the question which I think the delegates should understand, namely, it is an important matter for a county society to know that whenever they refer a judicial matter of this kind to their Council how the Council is going to act on it.

Dr. O'Byrne: I withdraw my motion.

Dr. Merlin Z. Albro, Chicago, offered the following:

Resolved, That the thanks of the members of the House of Delegates be extended to the members of the local profession for the entertainment which they provided for the members, the ladies and visiting doctors.

Motion seconded and carried.

Dr. Carl E. Black: Your committee, consisting of the secretary and chairman of the Council, appointed to formulate resolutions covering the recommendations in the various reports which were offered to the House of Delegates, is now ready to report.

1. *Resolved*, That the plan proposed by the American Medical Association on uniform regulation of membership be adopted by this society.

Dr. Black: I move the adoption of this resolution.

Motion seconded and carried.

2. *Resolved*, That we recommend to the Committee on Scientific Program the formation of sections on eye, ear, nose and throat and on public health and hygiene, and that the health officers of the state be organized into the latter section.

Dr. Black: I move the adoption of the resolution.

Motion seconded.

Dr. J. W. Vander Slice: In the recommendation for the creation of a section on public health and hygiene, it seems to me that, besides health officers, there should be added the various members of the Association of American Medical Milk Commissioners, and I would move, therefore, as an amendment, that they be added.

Dr. Black: I second the amendment.

The original motion, with its amendment, was put and carried.

3. *Resolved*, That the president appoint a committee of five to audit the accounts of the Council and to serve until the end of the annual meeting in May, 1913.

Dr. Black: I move the adoption of this resolution.

Motion seconded and carried.

4. *Resolved*, That the Committee on Public Policy and the secretary be a special committee to arrange a list of speakers on public health and social hygiene, and that so far as possible this subject be discussed by a member of the profession in every city, village and schoolhouse of the state, and that the county societies be interested so far as possible in this work.

Dr. Black: I move the adoption of the resolution.

Motion seconded and carried.

5. *Resolved*, That it is the opinion of the House of Delegates that the ILLINOIS MEDICAL JOURNAL should be issued twice each month or weekly, if possible.

Dr. Black: I move the adoption of this resolution.

Motion seconded. (Calls of No! No!)

Dr. Black: Under the By-Laws the Council can publish the JOURNAL as often as they see fit, but they would not see fit to change it without the authorization from this house, and we only ask for an expression of opinion.

Dr. Cotton: What would be the additional expense?

Dr. Black: We could, with our funds, furnish the JOURNAL twice each month.

Dr. A. M. Harvey: I move that this resolution be not concurred in by this house.

Motion seconded and carried.

6. WHEREAS, The apparent need of an industrial and educational colony for epileptics in the state of Illinois has become acute, and

WHEREAS, For eight years such a colony has existed on our statutes in this state, but without appropriation for location or maintenance; therefore, be it

Resolved, That it is the desire of the Illinois State Medical Society that an appropriation commensurate with the needs of this most unfortunate class (of whom there are nearly 10,000 in this state, of which number probably 2,000 would be suitable subjects for such state care and training) be made by our next legislature. Also, be it further

Resolved, That a copy of these resolutions be sent to his excellency, the governor, and members of the legislature at the proper time.

(Signed)

DR. W. H. C. SMITH,

Chairman State Committee of Epileptics of State.

DR. H. G. HART,

DR. HUGH T. PATRICK,

Conference of Charities and Corrections.

DR. FRANK BILLINGS,

DR. E. W. FIEGENBAUM.

Dr. Black: I move the adoption of these resolutions.

Motion seconded and carried.

Dr. Charles C. O'Byrne, Chicago, offered the following:

WHEREAS, It has become an established and well recognized fact that delegates from this society to the American Medical Association are and in the past have been elected by men more than one-half of whom are not members of the American Medical Association; therefore, be it

Resolved, That delegates from the Illinois State Medical Society to the American Medical Association are hereby instructed to use every effort to overcome this unfair system and to endeavor to secure election of delegates in a more representative manner.

It was moved and seconded that the resolution be adopted. Carried.

There being no further business to come before the meeting, on motion the House of Delegates adjourned *sine die*.

—One dirty milk man can cause more sorrow than all the criminals in Chicago.

—You can strain the manure out of milk, but you can't strain out the typhoid fever.

—The filter can take the dirt out of ordinary milk, but it requires pasteurization to take out the death.

—Dirty air kills the most fathers and mothers. Dirty milk kills the most children. The fathers and mothers may be able to save themselves. The children can't.

—If robbers killed ten men in the residence districts, what a noise there would be—but if dirty milk kills 100 babies in the congested districts you wouldn't hear a sound—except the sobs of the mothers.—From *Bulletin Chicago Department of Health*.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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JULY, 1912

DR. FLEXNER AGAIN SCORES AMERICAN MEDICAL SCHOOLS

Evidently the Carnegie Foundation is not to be stopped in its effort to improve conditions in America. We append herewith the latest fulmination from that body.

Three-fourths of the medical schools in America should be driven out of existence if the lowest terms on which medical schools can exist abroad were applied to this country, according to President Henry S. Pritchett of the Carnegie Foundation for the Advancement of Teaching. This is one of the deductions made by Dr. Pritchett in his introduction to the foundation's report on "Medical Education in Europe," by Dr. Abraham Flexner, which is made public to-day.

The Carnegie Foundation published in 1910 an elaborate report describing the conditions of medical education in the United States and Canada. The present, a companion volume on "Medical Education in Europe," by the same author, Abraham Flexner, is based on a personal study in 1910-11 of representative medical schools in Germany, Austria, France, England and Scotland. Perfection is found nowhere, but all European countries make a definite educational requirement for entrance on medical education, and permit no schools to teach medicine without the essential laboratory facilities and abundant clinical opportunities. In President Pritchett's words:

"Scandals in medical education exist in America alone. In no foreign country is a medical school to be found whose students do not learn anatomy in the dissecting-room and disease by the study of sick people. It has remained for the United States and Canada to confer annually the degree of doctor of medicine on and admit to practice hundreds who have learned anatomy from quiz-compendes, and whose acquaintance with disease is derived not from the study of the sick, but from the study of text-books. The state of Massachusetts tolerates in the city of Boston, the state of New York tolerates in the city of New York, the state of Illinois tolerates in the city of Chicago, the state of Missouri tolerates in the city of St. Louis, the state of California tolerates in the city of San Francisco, so-called medical schools that pretend to train doctors, despite the fact that they are almost wholly without clinical facilities. In no European country is it possible to find an educational farce of this description. If the lowest term on which a medical school can exist abroad were applied to America three-fourths of our existing medical schools would be closed at once."

In spite of serious defects the author finds medical education in Germany still leading the world; both because the medical sciences are highly developed in the laboratories and institutes of the German universities, and because the clinical teachers in the German university are university professors appointed on the basis of scientific eminence, and not, as often in America, local physicians who happen to be teachers of medicine besides.

Perhaps the most important part of the report deals with examinations. The American state board examination is almost altogether written, in consequence of which medical schools lacking laboratories and clinical facilities can by hard drilling prepare their students to pass. In Great Britain and in Germany, in order to pass anatomy, students must actually dissect; in order to pass in medicine and surgery they must make a diagnosis on people actually sick, and indicate the lines of treatment to be pursued.

LIBRARY OF THE STEPHENSON COUNTY MEDICAL SOCIETY

This wide-awake society has undertaken to increase the educational value of the organization by securing an up-to-date library, and has made arrangements to receive from the Morgan County Society an index of current periodicals covering twenty-five publications. This index will be made complete and undoubtedly it should be of great benefit to the members of the society.

One of the members has promised a legacy of \$2,500, and it is hoped to have an annual subscription of \$10 each from the physicians of Freeport, and \$5 each from the county members to support the library and index. We are glad to give prominence to the efforts of this society to make its organization more valuable to the members.

THE NATIONAL WHITE CROSS LEAGUE OF CHICAGO

Some year and a half ago a woman in the garb of a trained nurse appeared at the office of THE JOURNAL stating that she represented the National White Cross League, and offered certain toilet preparations for sale at a price which seemed considerably above their real value. On inquiry we were informed that this League maintained a hospital for the treatment of tuberculosis patients in the northern part of the state. Being familiar with the hospitals of this character then existing in the state, we decided to investigate the claim made by the party, and at once wrote to the county seat inquiring if such a hospital was really in that neighborhood. We found her statements essentially untrue, and this led to the further investigation of the League, which developed that there was such an organization with offices at 508 South Dearborn Street, the principal business of which seems to be to sell toilet articles as above mentioned, with a percentage of the profits going "to assist and give proper medical aid and treatment to those suffering from tuberculosis, who can only partially afford or cannot afford at all such care and nursing." Having taken advice thereon no reference has ever been made in THE JOURNAL to the League. From correspondence which we print below it seems, however, that there has been a considerable amount of question as to the objects and motives of the gentlemen composing the League. We are not prepared at this time to say that some good work has not been done with the money which seems to be applied for this purpose, and perhaps the best consideration to give the League at this time would be to print the following communication signed by the general superintendent.

The officers of the League appear to be: president, D. C. Moulding, M.D.; secretary, H. A. Smith; general superintendent, M. J. Brorby; trustees, D. C. Moulding, M.D., Frank L. Wood, Charles Horowitz, Jesse M. Crabb, P. G. Mittleberger.

CHICAGO, ILL., June 7, 1912.

To the Editor:—Many unjust, untrue, and malicious reports are in circulation in reference to the work of this League. In order that your publication may have facts at first hand to furnish any inquirer, we submit herewith a statement, showing our receipts for the past eleven months, as well as the amount of net profits diverted to the aid of the poor who are afflicted with tuberculosis. Our fiscal year ends June 30, at which time our books and accounts will be audited by certified public accountants, and statements published.

A true statement of actual net profits earned during the year can only be ascertained by inventory, so in submitting this statement, we have only taken the actual amount of money which we have paid out since the last audit.

We expect to increase our revenue and our field of operations for the coming year, and should opportunity offer, we trust your publication will give us a square deal, and always bear in mind that we neither solicit

nor accept contributions or free will offerings, but give full value to the consumer for every penny we receive. Yours very truly,

NATIONAL WHITE CROSS LEAGUE,

Per M. J. BRORBY.

CHICAGO, ILL.

To whom it may concern:—Our books and accounts are examined and audited by certified public accountants at the close of every fiscal year which ends on the 30th day of June.

Below is a statement of receipts and net profits paid into the tuberculosis fund from July 1, 1911, the beginning of the present fiscal year, up to and including May 31, 1912:

	Receipts.	Tuberculosis Fund.
Totals for July, 1911.....	\$1,146.25	\$190.00
Totals for August, 1911	1,188.51	160.38
Totals for September, 1911 ...	1,104.08	225.10
Totals for October, 1911	1,634.47	428.89
Totals for November, 1911 ...	1,553.18	433.60
Totals for December, 1911	1,518.23	398.98
Totals for January, 1912	695.39	202.57
Totals for February, 1912	1,016.78	319.03
Totals for March, 1912	1,490.29	409.75
Totals for April, 1912	1,445.75	377.50
Totals for May, 1912	1,523.66	422.07
Totals for eleven months...	\$14,316.59	\$3,567.67

Yours truly,

NATIONAL WHITE CROSS LEAGUE.

NATIONAL SOCIETY OF ANESTHETISTS

On June 6, at Atlantic City, during the meeting of the American Medical Association and following a symposium on anesthesia, the National Society of Anesthetists was organized, Prof. Yandel Henderson of Yale, chairman of the commission on anesthesia of the A. M. A. occupying the chair. Those assembled for the symposium, acting as a committee of the whole, proceeded to organization and elected the following officers for the year 1912-1913: president, James T. Gwathmey of New York; vice-presidents, Charles K. Teter of Cleveland, F. H. McMeccan of Cincinnati, and Yandel Henderson of New Haven; secretary, William C. Woolsey, 88 Lafayette Avenue, Brooklyn; treasurer, Harold A. Sanders of Brooklyn.

The constitution and by-laws were ordered to be drawn by the executive committee and submitted to the society at its next meeting for adoption; all names submitted for membership, if qualified in the estimation of the executive committee, shall be considered as charter members if presented within a period of sixty days and accompanied by the levied dues of three dollars.

The National Society of Anesthetists, in this notice, calls all those who are actively interested in this work to join its ranks and assist in developing the subject of anesthesia to greater perfection and more uniform safety.

WILLIAM C. WOOLSEY, Secretary.

June 10, 1912.

THE CHICAGO HOSPITAL COLLEGE OF MEDICINE READY FOR BUSINESS

In spite of the exposure of this institution appearing in both the *ILLINOIS MEDICAL JOURNAL* and *The Journal of the A. M. A.*, the Chicago Hospital of Medicine seems to be prepared to do business at its location, 3832-3834 Rhodes Avenue, Chicago, and has a sign in front of it indicating that a free dispensary is being conducted. This new college also claims to have close connection with the Chicago Hospital, which hospital is apparently a "booze" cure institution. On its faculty is found a Dr. O'Deon Bourque, and probably this is the same party then known as Dr. N. O. Bourque, whose name appeared on two diplomas issued by the Crescent Medical University which were purchased outright by a young woman from Georgia several years ago. We are informed that the Crescent Medical University was conducted by Dr. Alexander Chittick, who was convicted and sentenced to serve sixty days in the county jail, in connection with the selling of diplomas. Dr. Chittick, it appears, claims to be the discoverer of some catholicon when administered hypodermically or intravenously. Candidates for speedy graduation and a bargain diploma may possibly find at this college what they are seeking.

RESULTS OF EXAMINATIONS HELD BY THE ILLINOIS BOARD OF PHARMACY

This board seems to be doing its duty to the people and those already in business, as is shown by the results of the examinations and fines collected. During the year eight examinations for registration as assistant pharmacist and registered pharmacist were held during the period covered by this report. At these examinations 231 applicants took the examinations for assistant pharmacist and 331 took the examinations for registered pharmacist. Of the assistant pharmacist applicants, 157 passed successful examinations and seventy-four failed. One hundred and five of those who passed were successful on the first trial, forty-one failed once and passed on the second trial, eight failed twice and were successful on the third trial, and three failed three times and passed on the fourth trial. Of the failures, thirty-eight failed once, twenty-five failed three times, one failed four times, and two failed five times.

One hundred and seventy-three applicants for registered pharmacist passed successful examinations, and 158 were unsuccessful. Of those who passed 108 were successful on the first trial, thirty-four passed on

the second trial, thirteen on the third trial, five on the fourth, one on the fifth and two on the sixth trial.

Of those who were unsuccessful, seventy failed once, fifty-eight twice, nineteen three times, eight four times, one five times, and two six times. Thirteen applicants took the examination during the year, for local registered pharmacist. Of this number eleven were successful and two failed on the first trial.

The amount of fines collected during the year was \$2,171.50.

THE PROGRAM OF THE STATE SOCIETY, AND THE AMBITIOUS PHYSICIAN WHO WISHES TO HAVE A PLACE ON IT

That hard-headed Iowa man, Dr. L. W. Littig, who has just retired from the presidency of his state organization, delivered the address at their Burlington meeting which has been widely read and most favorably commented on. He refers to the program of the Iowa State Society in language which is probably applicable to every other society in the land. We are sure it applies favorably to Illinois. We can scarcely add emphasis to Dr. Littig's language. Gentlemen who have a real message to deliver will always and everywhere have a hearing. Those who speak only in the language of the text-books do themselves harm and tire their hearers. "Therefore, brethren, if you wish to get on the next program let your knowledge be displayed in the county society, and we are sure your lucubrations will be in demand for the state program. Dr. Littig said:

"It has sometimes been said that it is difficult to secure a place on the program of the annual session. Nothing can be further from the truth. I assure you that the program committee and the various chairmen are anxiously looking for the very best men to read papers. If the best men are not secured, it is because they are not known. If any member wishes to read a paper before the society, let him on several occasions discuss the papers of others. If he does this well, he is a marked man, and from that time on it will be impossible for him to keep off the program."

NOTICE

Owing to delays over which the editors have no control, the minutes of the annual meeting were received too late for editorial comment in this issue.

The oration in medicine, at the request of Dr. Knopf, will not be published until the October issue.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The regular monthly meeting of the Adams County Medical Society was held at the Chamber of Commerce Rooms, on Monday, June 10, 1912. Meeting was called to order by President Pittman. Others present were: Drs. Ball, Nickerson, Mitchell, Christie, Brenner, Knox, Pearce, Blickhan, Stine, Ericson, Ray, Mercer, Kirk Shawgo, Miller (W. E.), Schullian, Center, Beirne, J. B. Shawgo, Bloomer, Koch, Austin, Pfeiffer, Groves, Montgomery, W. E. Mercer, Werner and Williams. Visitor: Dr. Jergens from Edina, Missouri.

After the various committees had made their reports the society listened to the report of the regularly elected and duly qualified delegate to the state meeting, Dr. R. J. Christie. It was moved and seconded that the report be received and placed on the minutes, a vote of thanks be given Dr. Christie, and also that he be given an honorable discharge from his duties as delegate. Dr. Virgil Beavers, of Plainville, was admitted to membership by the unanimous vote of the society. At noon the members adjourned to the Hotel Quincy for luncheon.

The scientific program occupied the entire afternoon. Some very interesting cases were reported by several of the members. Adams County feels very proud because the new president of the Illinois State Medical Society is one of her oldest and best members. Dr. L. H. A. Nickerson has been a member of our society since 1877. He has been very faithful in attendance and has always been willing to do anything for the improvement of his society. He read a very practical and instructive paper on "Summer Diarrhea." The discussion which followed brought out many good points. The pasteurization of milk was considered and many different views were expressed.

The meeting finally adjourned after a very pleasant and successful day.

BUREAU COUNTY

The thirty-seventh semi-annual meeting of the Bureau County Medical Society was held at the City Hall, Princeton, Ill., Thursday, May 9, 1912, with the following officers: president, J. F. Lewis; first vice-president, C. C. Barrett; second vice-president, O. J. Flint; secretary and treasurer, H. R. Carson.

Committees: Program—O. J. Flint, J. H. Franklin, M. J. Coveny. Publication—H. R. Carson, A. E. Owens, J. D. Traumbauer. Necrology—J. C. White, T. Sprague, Wm. Keller. Censors—C. F. Horner, O. J. Moran, J. J. O'Malley. Arrangement—C. C. Scott, M. H. Blackburn, S. W. Hopkins.

Program for afternoon Session—"Late Experiences in Skin and Venereal Diseases," Wm. L. Baum, Chicago. "Hyperthyroidism, Report of a Case," S. W. Hopkins, Walnut. "Hydrotherapy in Nervous Diseases," H. Douglas Singer, Kankakee.

Our president being absent, Dr. O. J. Flint presided at the morning or business session. A motion to dispense with the minutes of last meeting carried and then the following treasurer's report was read and approved:

Balance on hand last meeting	\$30.49
Total receipts from Nov. 9, 1911, to Jan. 1, 1912.....	42.00

\$72.49

Itemized expenses:

Printing (Tribune)	\$ 7.85
Printing (Republican)	4.25
Drafts to State Society	50.00
Secretary and treasurer salary	10.00

 \$72.10

Balance turned over39
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 \$72.49

The present treasurer will make his report for the year 1912 at the November meeting.

Dr. O. J. Flint, Princeton, was elected delegate to the state meeting to be held at Springfield May 21, 22 and 23. Dr. C. C. Barrett, Princeton, was elected alternate. The society voted to send delegate uninstructed.

The application of Dr. Bertram A. Martin, Mineral, was presented and he was duly elected a member of our society. Dr. Frank B. Schroeder, Princeton, presented a transfer from the Chicago Medical Society and his membership was duly recorded in our Society.

A communication from Dr. Egan, State Board of Health, asking the society's cooperation in the prosecution of a self-styled chiropractor, at present located in our county, was read. The society voted to pledge their aid and support to the State Board of Health in this and any future prosecution of quacks; the president to appoint a committee to confer with the State Board of Health and the County Prosecuting Attorney.

The Owen bill was brought up and our members urged to use their influence in behalf of its passage. Dr. Corwin's resolutions (*Bulletin of the Chicago Medical Society*) were read. At our last meeting, the society voted against the Zurawski amendment and in favor of the Black. Dr. Hubert Work's resolutions in regard to amalgamation of American Medical Association with county society as State and county are now united, was discussed. The sentiment of members present seemed to be in favor of thus extending the membership of the county society to American Medical Association; provided the increase in dues would not decrease the membership of county society and thus defeat the objects of such extension of organization. The further consideration of the plan was left to November meeting.

Dr. W. C. Griswold occupied the chair at the afternoon or program session. Dr. William L. Baum of Chicago gave a talk on "Late Experiences in Skin and Venereal Diseases." Dr. Baum is professor of skin and venereal diseases in the Post-Graduate Medical School of Chicago and his talk, as subject indicates, included all the new methods of diagnosis and treatment in his department. Our absent members missed a good live paper.

Dr. Roswell T. Pettit, bacteriologist at Ottawa Tent Colony, then gave us a whirlwind address on the "Diagnostic and Therapeutic Uses of Tuberculin." Dr. Pettit not only knows how to say, but also knows what to say; his talk was both interesting and instructive.

The officers of the society are as follows: president, Dr. J. F. Lewis; vice-president, Dr. C. C. Barrett; delegate, Dr. O. J. Flint; censors, Drs. C. F. Horner, J. J. Moran and J. M. O'Malley; secretary and treasurer, Dr. H. R. Carson.

The following members of our society availed themselves of the opportunity to attend this program: M. H. Blackburn, B. F. Landis, C. C. Barrett, E. H. Bishop, C. C. Scott, A. S. Rummell, W. J. Linebery, W. E. Howard, O. J. Flint, J. R. Marshall, J. M. O'Malley, M. J. Coveny, G. G. Kilgour, Wm. Kaul, H. D. Steele, Wm. Keller, J. J. Moran, J. F. Taylor, W. C. Griswold, E. M. Byers, H. R. Carson.

We appreciate the attendance of so many visitors at our meeting and thank them heartily for their attendance and active discussion of our program. The following live-wires registered with the secretary: Drs. W. H. Adams of Atkinson, J. N. Downs of Annawan, E. B. Gilbert of Geneseo, Bushee of Buda, Robert Weber

of Hoopole, Chas. S. Young of Geneseo, W. H. Cole, H. L. Fischer, H. N. Heflin, G. P. Noren, J. H. Oliver and H. J. Stewart of Kewanee.

A vote of thanks was given to the following two gentlemen for their assistance in the program: Drs. William L. Baum of Chicago and Roswell T. Pettit of Ottawa.

H. R. CARSON, Secretary.

CHAMPAIGN COUNTY

Dr. E. H. Ochsner, of Chicago, came to Champaign to address our May meeting. The earnest, rather conversational manner that is characteristic of Dr. Ochsner put him at once in that happy relation with his audience which, besides the great value of his subject, made listening a decided pleasure. As to the subject, our members could go far from Champaign, hear many specialists, and not get a more comprehensive idea of this part of joint troubles than was given us at this time.

Dr. Ochsner's subject was "The Treatment of Non-Tuberculous Joint Affections," and not a point of importance was neglected from the simplest measures of hygiene to the most difficult surgical procedures. He introduced the subject by laying special emphasis on fresh air for the patient and thoroughly good hygiene generally. Medication-salicylates, potassium iodid and vaccines—was given place and importance but proper fixation means and apparatus were explained in a way that really gave Dr. Ochsner's methods to those who heard him. The best material for fixation apparatus and the method of applying it were described to the minutest points. Dr. Ochsner's own discovery, that when a joint is absolutely immobilized with perfect muscle equilibrium there is, within 24 to 48 hours, cessation of spasm and pain, is of the greatest importance as this treatment can be applied to acute articular rheumatism where it is believed to lessen the danger of complications; to gonorrheal synovitis; to joints that have received oft repeated slight trauma until synovitis is produced, and to joint trouble due to what is called the fourth stage of lues. Immobilization is obtained by plaster of Paris reinforced in some cases by basket splints or gluten bandages and as absolute rest and relaxation are not easily gained in some cases, patience must not be exhausted if a cast should have to be removed and another put on several times. Anesthesia was advocated to aid in relieving spasm and pain when a cast is applied and, since studies of the blood have shown that during prolonged pain the opsonic index is reduced, anesthesia is of special value. Drainage tubes should be thought of only for pus and for gun-shot wounds and like injuries. For slight contractures without ankylosis the natural use of the joints as in work or play was advised. The graver surgical treatment necessary for some cases was spoken of at some length but with the preliminary statement that in the majority of cases local surgical procedures should not be necessary in non-tuberculous diseases.

The Champaign Medical Society takes great pride in the good service Dr. W. K. Newcomb has given to organized medicine as president of the Illinois State Medical Society the last year. He has in the past twelve years been successively counselor for this district, vice-president, president-elect and president, and in all has given to the state and to local medical affairs his best thought and most unselfish attention. During the past year as president he visited twenty-one local, three district societies and one state society. Dr. Newcomb being a true gentleman by nature has embodied dignity and courtesy in all these relationships. His address on the last afternoon of the Springfield meeting was on "The Physician Considered from an Economic Standpoint," and contained facts very personal to every physician: the curtailed limit for physicians, the often times long continued hours of work, the unfavorable time and unsanitary or disadvantageous surroundings where his utmost skill may be called into use; the unusual statistics rate of nervous, heart and tubercular diseases shown for physicians. "The physician is the living embodiment of unsettled habits." The patrons of a physician should admit the necessity for the conservation of his health and strength since the personal element which makes it almost impossible for a doctor to delegate

his work to another is of so much importance to them. The physician himself should by adequate rest and the avoidance of hurry "take heed to his own life."

COOK COUNTY

SOUTH SIDE BRANCH CHICAGO MEDICAL SOCIETY

Regular Meeting, March 26, 1912

A regular meeting was held March 26, 1912, with the president, Dr. Daniel N. Eisendrath, in the chair. Dr. E. Friend presented a "Case Report—Sarcoma of Arm with Resection of Brachial Artery." Dr. Emory Hill read a paper on "The Significance of Arteriosclerosis in the Vessels of the Fundus Oculi." Dr. Julius Grinker read a paper on "Freud's Psycho-Analysis." Dr. E. F. Wells read a paper on "Interlobar Empyema."

CHICAGO MEDICAL SOCIETY

Regular Meeting, April 3, 1912

The program consisted in a symposium on the Social Evil. Presiding officers: Prof. C. R. Henderson and President Patton; Prof. Henderson in the chair. Dr. Patton gave an introductory address. Dr. Rachelle Yarros, Chairman Committee of Social Hygiene, General Federation of Women's Clubs, presented "The Great Need of Education on Matters of Sex." Rev. Walter T. Sumner, Chairman Chicago Vice Commission, made "Some Observations of the Vice Commission." Dr. Wm. L. Baum, Member Chicago Vice Commission, gave "Economic Phases of the Venereal Diseases."

Second Session, April 4, 1912

The symposium was continued. Presiding officers, Prof. C. R. Henderson and President Patton, the latter in the chair. Prof. Henderson, President of the Society of Social Hygiene, gave an introductory address. Dr. Henry B. Favill described "The Role of the Physician in Social Service." Dr. W. T. Belfield, Secretary of the Society of Social Hygiene, described "The Procreation of the Unfit." Dr. John N. Hurty, Secretary of the Indiana State Board of Health, gave an address on "Requirements for a Marriage License." Dr. Clara P. Seippel, President Frances Juvenile Home, spoke on "Venereal Diseases in Children."

DISCUSSION

Dr. Liston H. Montgomery: I have several data which I would be pleased to submit, but the time for discussion of papers is too limited to permit my doing so. Hence, I will only call the attention of the society to one suggestion, namely: as the subject has received the attention of municipalities in several states as well as by several states in the union, I see no reason why it should not be a subject also for the federal government to take hold of and regulate. A National Department of Health naturally would be the department to consider this question, and I think this is an additional reason for the creation of such department.

Dr. Anna Blount: I have had considerable experience in teaching sex hygiene to high school pupils, and I would be extremely astonished if during such a discussion any one should smile. It looks bad in a medical society when an evening's discussion of matters of sex hygiene should be attended by laughter.

I want to say a word about Dean Sumner's characterization of the whole matter as a man problem. If it is a man problem it is curious that in forty centuries or more the male sex has not settled this problem. It seems that this is not only a human problem; it is a question that belongs to men as men and to women as women, and I for my part do not believe that you will ever arrive at a solution of this question, especially the question of commercialized vice until women can have a voice in the making of laws. In countries where women are assisting in making laws girls are protected. In Wyoming where women have voted the longest of any place in the civilized world, the age of consent is 21 years. In no state where women vote is it less than 17 years. In most states and countries where women

take part in the government, the illegitimate child is protected. The father is compelled to support the child until 18, as in Colorado, and 21, as in Norway. It is a question where we need the wisdom of the woman as well as of the man.

Dr. Denslow Lewis: The possibility of presenting a symposium of this character shows how professional and public opinion has changed within the past few years. Only twenty years ago the late Dr. Valentine was ruled off the floor of the American Medical Association when he attempted to speak on what was then called "that vile disease, gonorrhea." Only thirteen years ago, in referring to my proposition to teach sex hygiene to children, Dr. Howard Kelly asserted that "the discussion of the subject is attended with filth and we besmireh ourselves by discussing it in public."

The urgent need, in my opinion, is consistent education of the young. Elaborate instruction in biology, zoology or botany is not necessary; neither does the instructor need to be a person of great tact or unusual attainments. Let us tell the truth in the simplest manner, so every child may know. The sexual instinct is imperious because the perpetuation of the race must continue. The coming together of a father and mother results in the child—a creature of their own flesh and blood. The little yellow chicken is formed in the eggshell, but in man the young develops in the body of the mother like the calf and the kitten. Menstruation means that the girl is becoming a woman, capable, like her mother, of having children in the future. The sexual instinct often impels thoughtless ignorant boys to premature indulgence, which is inadvisable, for prudential reasons which suggest themselves. In this connection reference is made to dishonor, disgrace and possible disease, in the plainest terms.

I have elsewhere advanced my views in detail, so I now content myself with stating that it is most gratifying to be able to say that through the influence of one of this symposium's distinguished essayists—Dean Sumner—and with the active cooperation of the president of the Chicago Board of Education—a physician of marked executive ability, it is probable that before long our city will take the initiative in a rational propaganda along the lines of consistent instruction in sex hygiene and venereal prophylaxis.

Another matter of great importance, but very generally neglected, is the supervision of the pleasures of our young people. It is not to be expected that the young working girl will go to her hall bedroom when her day's work is done and remain there till it is time to go to work again the next morning. She seeks, quite naturally, the companionship of young men. This is advisable, for, without acquaintance, marriage is impossible, and the family, which we regard as the foundation stone of our social fabric, is not brought into existence. I commend the action of Trinity Episcopal Church, which gives a neighborhood dance once a week, a 10-cent supper every Sunday night and makes of its parish house a general meeting place for young people under proper surroundings. An association of our young people with respectable women, who, without implied patronage or assumed superiority, show a kindly interest in the working class, will be of benefit to all.

Regular Meeting, April 10, 1912

A regular meeting was held April 10, 1912, with the president, Dr. J. M. Patton, in the chair. Dr. Edward H. Hume (by invitation) read a paper on "The Chinese and Western Viewpoint of Disease." Illustrated by lantern slides. Dr. E. Fletcher Ingals read a paper on "Myocardial Degeneration." Dr. Julius Grinker presented the subject, "Precocious Dementia (Dementia Præcox)."

DISCUSSION ON THE PAPER OF DR. INGALS

Dr. J. L. Miller: Dr. Ingals has covered the subject thoroughly and left little to be said. I would like, however, to say a few words about the classification of these diseases. As far as the clinician is concerned, these cases are best grouped under the term of chronic heart muscle insufficiency. I would not differentiate clinically the exact causes of this insufficiency, whether due to fatty deposits or fibrous myocarditis or whatever it may be, as this is in reality a pathologic diagnosis.

The symptomatology of these various diseases is, after all, very much the same. We have a heart muscle that becomes insufficient to carry on its work. Whether this rests with a primary disturbance of the heart muscle or certain mechanical factors, like increased blood-pressure or mechanical disturbances of the pulmonary circulation, the symptoms are very much the same.

Dr. Ingals did not go into the treatment of the condition. I would like to have heard what he has to say in regard to that. To my mind, the treatment is comparatively simple. Having an incompetent heart, the treatment becomes practically the same, no matter what the character of the incompetency. We are dealing with a heart muscle no longer able to carry on its work, no matter whether due to valvular disease or weak heart muscle or high blood-pressure. If the patient suffers from a lack of compensation, the treatment is always the same. It is true that the result obtained may be much less satisfactory in one group than in another. Nevertheless, the fundamental principles of the treatment must be the same.

In the drug treatment of these conditions, and that to my mind is always secondary, digitalis must be the mainstay. If a good preparation of digitalis fails to produce results, we have practically exhausted our drug medication by mouth. The difficulty in the past has been in obtaining a preparation of digitalis that is reliable. It is apparently of little importance in what form we administer the digitalis, so that we deal with an active preparation. It has been shown that the infusion contains practically the same constituents as does the tincture, and it is more a matter of selecting an active preparation than it is to select any special form of digitalis.

It also seems to me that it is better to use a combination of the glucosids than a single one. For instance, the digitoxin is much less satisfactory than a combination of digitoxin and digitalin as we get in the tincture, dried leaves or extract. The toxic and physiologic doses of digitoxin are close together. It is difficult to handle the product so that we can confine its effects solely to the physiologic action without experiencing its toxic effects. On the other hand, digitalin is very little toxic and is much less powerful in physiologic action than digitoxin; by combining the two we are able to manage the drug better than we can by using either preparation alone.

There is one way of giving digitalis that is worth mentioning, and which often brings about results when digitalis administered by mouth fails to produce any effect, and that is the intravenous medication. In many of these cases of heart muscle insufficiency, and we have used it more especially in those cases where there was high blood-pressure and where it is ordinarily thought that the use of digitalis preparations is contra-indicated, the patients have obtained a most striking relief from the intravenous injection of strophanthin. After eight or ten days, when the effect has passed off, the dose may be repeated, and many patients have been made comfortable in this way.

It seems to me that the lesson to be gathered from the discussion of myocarditis is the great difficulty in differentiating pathologic change from the clinical symptoms, and the fact that in all cardiac troubles where there is evidence of broken compensation, the drug treatment is confined to the use of the active preparations of digitalis.

Dr. J. M. Patton: I cannot refrain from emphasizing one point: the value of the diminution of the systolic tone of the heart as a diagnostic symptom. Every case of myocardial degeneration, from whatever cause, will give a diminution in the first tone. A physician in this city, about 70 years old, had precordial pain. I knew him very well, and I had seen him several times a week for several years. He was one of the best preserved, most active and energetic and tireless men of his age. He was most careful in his habits and lived a regular life.

He suddenly developed precordial pain. It was located in such a position that it was not distinctive of angina, and it was a question whether it was an

anginous pain or not. I was very slow to admit that there was anything the matter with his heart because of the integrity of the first one. Nevertheless he died suddenly, and at the post-mortem we found an area of acute myomalacia cordis of the anterior wall of the left ventricle about the size of a quarter, due to the blocking of a branch of the coronary artery. Undoubtedly, just previous to death, it must have developed into a true cardiac aneurysm. The center of this softened area had broken and a considerable hemorrhage took place into the pericardial sac, which caused death. The remainder of the heart muscle was practically normal, accounting for the maintenance of the character of the first tone. Of course, no one could diagnosticate that condition. But it shows that where you have a serious loss of the volume of the first tone it means that you have a degenerated condition of the muscle, which means loss of integrity.

Dr. E. Fletcher Ingals (closing): I fully agree with Dr. Miller in most he has said of the treatment of myocardial degeneration. Digitalis is the most important drug, but there is one other remedy that is nearly as valuable, namely, nux vomica in some form. It is better than strychnin. A combination of nux vomica and digitalis seems to me to do all that drugs can accomplish in most of these cases.

The use of the alkaloids of digitalis has not been very satisfactory with most of us. One of the common errors in the administration of both of these remedies is that they are not given in sufficiently large doses. Most physicians think 10 drops of digitalis, which is about 5 minims, is the proper dose, whereas it is very often necessary to give 20 or 30 minims three times a day. I have often noted that the dose has been too small in cases where these remedies were not having the desired effect. Large doses of digitalis combined with comparatively large doses of nux vomica, will help practically all of these cases that can be benefited in any way. The heart must be relieved from excessive work; then these remedies should be employed to strengthen the muscular fibers.

I have not used strophanthin intravenously, but I have very little confidence in it, except in nervous affections of the heart where the irregular action seems not to be due to organic change. In such cases strophanthus seems to do some good, but so little that I do not count on it for much. Perhaps it would be better if combined with something else.

It is a good plan in ordering medicines to prescribe one at a time, if one has time enough. I usually prescribe more than one remedy acting in the same direction, the quantity of each being small so that the combined remedies will make a proper dose for the patient. I think that especially where we see patients only in the office, or in a single consultation, as I usually do, we get better results by combining heart tonics than by giving any one by itself. If nux vomica and digitalis do not help, we are usually dealing with a hopeless case of myocardial degeneration.

In endocardial lesions where the muscle fibers are not degenerated, the results of treatment are very satisfactory, for under proper stimulation of the heart with the right amount of rest, these patients are almost sure to improve, excepting in the final stage, when the system does not respond to anything.

*Regular Meeting, April 17, 1912**

A regular meeting of the Chicago Medical Society was held April 17, 1912, with the president, Dr. J. M. Patton, in the chair. The program consisted in a Symposium on Mental Diseases, given jointly with the West Side Branch. Dr. H. A. Tomlinson of St. Peter, Minn., read a paper on "The Conditions Out of Which Insanity Grows." Dr. Sidney I. Schwab of St. Louis, Mo., read a paper on "Abnormal States in Otherwise Normal Individuals." Dr. H. Douglas Singer, of Kankakee, Ill., read a paper on "Dementia Praecox." Dr. Mary E. Pogue read a paper on "Amentia."

* Papers and discussions will appear in subsequent issues.

Regular Meeting, April 24, 1912

A regular meeting of the Chicago Medical Society was held April 24, 1912, with the president, Dr. J. M. Patton, in the chair. Dr. Alex. C. Wiener read a paper on "Tumors of Tuberculous Origin." Dr. Patrick O'Donnell displayed stereoscopic pictures of the cases. Dr. A. Augustus O'Neill read a paper on "A New and Original Method in the Surgical Cure of Fistula." Illustrated with lantern slides. Dr. A. P. Heineck presented the subject, "Hernias of the Fallopian Tube, of the Ovary and of the Tube and Ovary." Dr. Walter B. Metcalf read a paper on "Obscure Tuberculosis, Symptoms, Diagnosis and Treatment."

DISCUSSION ON THE PAPER OF DR. WIENER

Dr. A. Gehrman: This paper brings out the fact that there are tuberculous tumors clinically as well as pathologically. The surgeon and the internist must differentiate every enlargement as to tuberculosis. The pathologic side of the paper interests me particularly. It has been my opinion that the fight of the body against the tubercle bacillus is one where the organism attempts to corral the bacillus and build a fence around it. If it succeeds, the individual recovers; if it fails, the individual will eventually die.

In the diagnosis of these tissues we have certain things to look for, and we will finally come to the conclusion that it is either tuberculosis, syphilis or, perhaps, a malignant growth. It may be an inflammatory mass; the pathologist may be unable to decide from sections alone.

I have thought that there can be such a thing as the dissemination of the tubercle bacillus through the body, or through a part of the body, as in the case cited by Dr. Wiener, in which it has happened that the bacilli die because of low vitality, and are gradually dissolved. They are not there in sufficient numbers to produce the ordinary changes of tuberculosis, but we have the effect of slow intoxication of the tissues which brings about that characteristic antagonism to tuberculosis, a stimulation and overgrowth of connective tissue. Where there is a mass of displaced epithelial cells, one must look sharp as to whether it is malignant or an inflammatory growth.

Dr. A. J. Ochsner: This paper is along the right line. Our conception of pathology will undoubtedly be remodeled during the next few years as a result of observations and research Dr. Wiener has told us about and the reasoning which we have heard from Dr. Gehrman. We have an illustration of what the tubercle bacillus will do when we have a sudden dissemination of bacilli, as in the case of an acute miliary tuberculosis, when suddenly the tissues of the body are flooded with bacilli, and wherever they lodge there is a production of tubercles. The individual bacillus is very small, but the sum total of tuberculous tissue which is formed suddenly in that way is not small in amount.

Microscopically, we see that there is a formation of many new connective cells. In the giant cells we have an enormous multiplication of nuclei and a beginning destruction of the tissue in the center of the cell where the nutrition is bad. Consequently, there must be an intense irritation of the tissues by the bacillus and its products.

I am absolutely convinced that there is a definite organism which under certain conditions causes carcinoma and under others sarcoma. Every surgeon of experience knows that every now and then a malignant growth disappears spontaneously. It is possible that the micro-organisms giving rise to this growth have died, and that the products of the organism in question continue to cause irritation and make for growth of tissue to a certain extent. When these substances cease to exist there is nothing else for the growth to do except to die.

Many years ago Dr. William White of the University of Pennsylvania reported a large number of cases in which malignant growths and other conditions had disappeared as the result of operations in which nothing was done.

What Dr. Wiener told us about the relation of mastitis and carcinoma is exceedingly interesting, because the demonstrations of Dr. Rodman had convinced me that there is a definite relation between mastitis and carcinoma. My concep-

tion was that the mastitis furnished the irritation, which in turn made it possible for the specific micro-organism to get a foothold and produce a malignant growth.

Years ago when we first found out the relation between lupus and epithelioma of the face, we had an instance of this same condition, and at that time the fact was brought out that epithelioma on the base of a lupus was not at all an uncommon condition. In my own experience the number of spontaneous cures of enlarged thyroids is enormous, and it may be on a basis such as that Dr. Wiener mentioned.

Dr. Wiener (closing): The clinician should have more self-reliance and not hesitate to pass beyond the diagnostic skill of the pathologist. Lyon, Poucet and Leriche showed that we cannot ask the pathologist to make a diagnosis of a malignant growth with clinical observation. The habit of saying that professor so and so said that it is a carcinoma or a sarcoma must cease in the interest of the patient as well as ourselves. The pathologist is simply not in the position to say whether it is a malignant tumor or not. The profession must make a better diagnosis, and the new biologic test points the way how that can be done. It is not alone pathology but chemical pathology on which we must depend in the future.

DISCUSSION ON THE PAPER OF DR. O'NEILL

Dr. E. M. Brown: This method is a definite advance in the surgery of this locality. Many of the difficulties by which we have been confronted in this particular field of work will now be overcome successfully. It is necessary, no matter what method or operation is done, that a thorough diagnosis is made, using all means at our disposal for doing so. One should always use the rectoscope, but it is a dangerous instrument except in skilled hands, and even then it may be dangerous. A false opening may be made and subsequently a false operation.

Various methods have been used for tracing the fistulous tracts, but it seems to me that this is a most excellent one, but one must observe one point which makes for success in all these operations, and that is extreme cleanliness of the site of operation. If there is a leaking bowel it is quite impossible to clean up the field of operation, no matter what method is employed.

Hemorrhage is another thing that must be guarded against, and it seems that Dr. O'Neill's method will help very materially to overcome this danger. In fact, his method will do much to simplify this operation and make the results more uniformly successful.

There is one objection to the use of plaster-of-Paris, and that is the danger of injecting it into a fistulous tract leading to some other viscera or a post-rectal abscess of large size going high up when there might be some difficulty in removing the plaster. On the whole, however, I think that this is a distinct contribution in advance to the surgery of fistula, and I shall certainly try the method when the opportunity offers itself.

Dr. O'Neill (closing): All the speculations with regard to injuring the sphincters will be unnecessary with this method if you will follow the plaster-of-Paris carefully in doing the dissection and not infect the wound. Acute or subacute conditions should not be operated on except for drainage. The rectal contamination is the greatest obstacle. Early incision and drainage will obviate this. Later the plaster will always show where the fistulous tract is, and it can be dissected out without any reference to anatomy by simply following it.

DISCUSSION ON THE PAPER OF DR. HEINECK

Dr. William Fuller: We possess to-day an excellent working knowledge of hernia in general. The methods by which the radical operations are carried out are reliable. There are a few points, however, pertaining to the subject which are unsettled, but they are not of great importance in one way or the other.

I could not help thinking while listening to Dr. Heineck's presentation of this subject, of the great difference in knowledge we have of hernia as compared to that possessed by the ancient writers in medicine. Celsus and his contemporaries

believed that a hernia occurred only as a result of a peritoneal tear; and that through this tear the contents of the abdominal cavity, by virtue of their own weight, herniated through this weak point in the peritoneum.

The operation recommended at that period for the cure of a hernia included tying off and removal of the cord and testis. If history is correct it was Paré who first advised against such drastic or radical means for the cure of a hernia, although he did this without having a clear knowledge of the anatomy of hernia.

Pierre Franco was first to accurately describe a hernia, and the description he then gave of a protrusion of the herniated organ into a preformed sac differs in no sense from our knowledge of hernia to-day.

Most hernias have many symptoms in common. A hernial sac free from adhesions to the herniated contents, be they herniated portions of gut, omentum, bladder, fallopian tube, ovary or vermiform appendix, or several of these structures combined, would present many symptoms in common.

In fact, a hernial sac with few or no adhesions, might have a hernia of one organ to-day and of some other organ another day. The diagnosis, therefore, of a hernia of the tube and ovary previous to an operation is not possible; it presents no symptoms peculiarly its own, and its recognition before exposing it to view by the surgeon's scalpel has not, in so far as I know, been accomplished.

It follows, therefore, that a hernia of the tube, ovary, or tube and ovary, is of interest only from its great rarity; for it presents nothing unusual in clinical expression nor calls for anything unusual in an operative way for its cure. Personally, I am glad to have heard Dr. Heineck's excellent paper, and am sure that this is the opinion generally.

Dr. A. Goldspohn: I was quite pleased with the paper, but I did not learn what interests me most, how many of these cases are reported in the literature. I have had one case years ago, one of the oldest patients I ever operated on, a woman between 75 and 80 years of age. She had a convulsion and soon afterward I saw her. There was a history of recent intestinal obstruction. I found a small tumor in the left inguinal canal and at once suspected, from the convulsion, that it might be an ovary. I operated at once and found an adherent ovary in the hernial sac, together with a small amount of intestine which was constricted but was reduced. The ovary was adherent and had been down for a long time. The addition of the intestine brought on the strangulation and these symptoms. There was nothing unusual about the case otherwise. The patient recovered and lived for a number of years afterward. I have often wondered how frequently that occurred.

Dr. Heineck, closing: In the French, German and English literature of the last twenty years there were about 300 cases. We have had about six cases at the Cook County Hospital during the last two years while I was watching for them.

The condition is interesting from the standpoint of diagnosis, especially in young children and in the application of a truss over a herniated tube or ovary because it is likely to excite degenerative changes in these important organs.

FULTON COUNTY

The fifty-ninth meeting of the Fulton County Medical Society was called to order in the parlors of the Churchill House in Canton at 1:30 p. m., May 7, 1912. Minutes of the December meeting were read and approved. The secretary reported that he had recommended the name of Dr. P. H. Stoops as County Chairman of the Committee for Public Health Education of the American Medical Association; also as the county member of the Auxiliary Legislative Committee of the same Association. Report was approved and adopted. Proposed amendments to the State by-laws were read and the delegate was instructed to work and vote for them.

The scientific part of the program was taken up with a symposium on cerebro-spinal meningitis. Its etiology was presented by Dr. W. W. Johnston; pathology by Dr. P. S. Scholes; symptomatology by Dr. D. D. Kirby, and treatment by Dr. J. E. Coleman.

Two patients, victims of a recent epidemic were presented, one with partial paralysis of right arm and one that was characterized by marked icterus.

The following members were present: Drs. Murphy, Parks, Rogers, Chapin, Johnston, Cluts, Shallenberger, Scholes, Putnam, Sutton, Gray, Snively, Kirby, Stoops, Riley, Grimm, Welch, Taylor, Hayes, Simmons, Coleman, Ray, S. E. Nelson, Reagin, Adams. Total 25.

The collections amounted to \$57.50.

Drs. Snively, Stoops and Chapin were appointed a committee to draft resolutions of condolence to be presented to Dr. D. W. Bottorf concerning the recent death of his wife.

D. S. RAY, Secretary.

JERSEY COUNTY

The Jersey County Medical Society met May 14 at 2 p. m. in the courthouse at Jerseyville, pursuant to adjournment with Dr. A. K. Van Horn in the chair. The following members were present: Drs. Van Horn, Titterington, Bray, Gredhill, Bohannan and Cheney.

On motion of Dr. Bray the reading of the minutes of the previous meeting was dispensed with. Dr. Titterington suggested that instructions be given to the delegate and alternate who attend the meeting of the State Medical Society, May 21. On vote instructions were given to accept the proposed first, third, fourth and fifth amendments and to reject the second of, and to, the constitution.

Dr. Joseph L. Boehr of St. Louis, then read a paper on the "Modern Aspect of the Etiology and Treatment of Syphilis," with exhibition of photographs demonstrative of the *Spirochata pallida* and explanation of the use of salvarsan.

Dr. Bray reported a case of tuberculosis of the bladder. It was moved and seconded and carried that a vote of thanks be extended to Dr. Boehr for his able paper.

Adjournment was then taken to the June meeting.

MADISON COUNTY

The Madison County Medical Society met at the Illini Hotel, Alton, on the evening of May 3, 1912, in social session and first annual banquet. A magnificent feast had been prepared by the local committee of arrangements and with music and flowers, full justice was done to the good things provided. Dr. E. C. Ferguson presided over a short business session. It was ordered that flowers be sent to Dr. E. C. Lemen of Upper Alton and to Drs. Joseph Pogue and P. S. Weidman of Edwardsville, all of whom were confined to their homes by illness. Dr. E. W. Fiegenbaum was elected as toastmaster and Dr. Lay G. Burroughs delivered the address of welcome to our guests. The after-dinner speech was made by the Honorable W. P. Boynton, and was well received and highly appreciated. Short talks were also given by Dr. O. J. Gwynn, of Granite City, Dr. T. P. Yerkes, of Upper Alton, Dr. J. M. Pfeifferberger of Alton, Dr. J. Morgan Sims, of Collinsville and Dr. E. C. Spitze of Edwardsville.

Those attending the banquet were: Dr. and Mrs. W. H. C. Smith, Dr. and Mrs. Lay G. Burroughs, Dr. and Mrs. E. C. Ferguson, Dr. and Mrs. J. H. Fiegenbaum, Dr. T. P. Yerkes and daughter, Mrs. T. Thomas, Dr. and Mrs. Waldo Fisher, Dr. I. J. Beard and Miss Turner, Dr. O. J. Gwynn and Miss Caton, Dr. and Mrs. R. W. Binney, Dr. and Mrs. E. Wahl, Dr. and Mrs. H. W. Davis, Dr. and Mrs. E. W. Fiegenbaum, Dr. W. W. Everett and daughters, the Misses Everett, and Mrs. A. E. Clement, Dr. and Mrs. Chas. R. Kiser, Dr. and Mrs. George E. Wilkison, Dr. and Mrs. Ralph B. Scott, Dr. L. L. Yerkes and Miss Didlake, Dr. and Mrs.

E. A. Cook, Dr. and Mrs. J. B. Hastings, Hon. W. P. Boynton, Dr. J. M. Pfeiffer-berger, and Drs. J. H. Siegel, E. C. Spitze, F. C. Johnson, G. Taphorn and J. Morgan Sims.

One of the very best meetings of our society was held in Highland, on the afternoon of June 7, and considering the fact that the meeting took place in a remote corner of the county, was well attended. The president of the State Society, Dr. L. H. A. Nickerson, of Quincy, was the guest of the society and principal speaker. He read a well prepared paper on "Erysipelas" which was well received and caused an enthusiastic discussion in which nearly all present took part. On motion of Dr. Burroughs a vote of thanks was unanimously tendered the speaker. The local profession received the members with a very warm welcome and after the meeting, entertained the visitors with a substantial lunch after a tour through the city in automobiles. Those attending were Drs. Burroughs and Sims, of Collinsville, Merwin, Everett, Tibbetts and Kaeser of Highland, Ferguson, Wahl, Hirsch, Oliver and Fiegenbaum, of Edwardsville, Collins and Schmidt of St. Jacob, Hastings, of Alton, and Braner of Troy.

E. W. FIEGENBAUM, Secretary.

ROCK ISLAND COUNTY

The Rock Island County Medical Society met in regular session on Tuesday, June 11, 1912, at Manufacturers' Hotel, Moline, with an attendance of twenty-three members and four visitors. Members present, Drs. Snively, Bennett, Hollowbush, Peterson, Asay, Souders, Ross, Johnson, Donahoo, Love, Hawley, Sargent, Smith, Craig, Beck, Norman, Ludewig, Williams, Hall, First, Sala, Arp, and Chapman. Visitors, Drs. Patton, Taylor, Winsor and Crawford.

Business session followed the call to order by President Sargent and the approval of minutes of last meeting. The secretary's report showed the prosecution of practice-act-violator Sallberg at a standstill on account of laxity in the office of State's Attorney Magill. Motion carried that the secretary continue endeavor to stimulate prosecution. Egan correspondence regarding practice-act-violator Finch read and filed; order for prosecution being the next step. Bills allowed: New Harper Hotel Company, \$22.50, and Stanley Printing concern, \$2.25. Committee report on the application of Dr. F. J. Otis was not forthcoming and, in the absence of record of this committee a new one, Drs. Sauders, Snively and Asay, was appointed and action deferred. Five new applications were read on behalf of Drs. W. H. Cambill, Wm. M. Patton, J. E. Rankin, R. F. Winsor and Peter H. Wessel, and the above-mentioned committee asked to investigate each. The lucid and concise State Society report of Alternate Delegate Hollowbush was accepted. State meeting impressions were recited by Drs. Crawford and Chapman. Scientific program was marred by the absence of Dr. Seids and the resulting lack of his paper. The address of President Sargent was timely, forceful, and well-taken. Dr. C. E. Crawford of Rockford handled his subject: "Milk Inspection, in its Sanitary Relation," in a practical fashion, aimed at, and successful in provoking free discussion, which was opened by Dr. Smith and participated in by Drs. Hollowbush, Craig, Ludewig, Arp, Hall, Sauders, Chapman. Dr. Crawford's paper carried some suggestions for the practical application of authority, with its other instructiveness. Following a vote of thanks to Dr. Crawford, adjournment was taken until August at Watch Tower.

W. D. CHAPMAN, Secretary.

STEPHENSON COUNTY

The Stephenson County Medical Society met May 29 at the Court House in Freeport. Dr. Robert J. Burns presiding. The following answered to roll-call: Drs. Karcher, Thompson, Rideout, Snyder, Leavy, Hewetson, Phillips, Wilson, Smith, Stealy, Burns, Clark, Hutchins, Rosensteel, Mease and Harlan.

The minutes of the previous meeting were accepted as read. The following program was given:

The application for membership of Dr. H. F. Kammann, of German Valley, was read and placed before the board of censors for their recommendation. The president asked for a vote of thanks to be extended to Mr. Hugh McIntosh for his discussion of Dr. Smith's paper.

A report was made of the work accomplished in connection with the establishment of the medical library.

Our society has been unfortunate from time to time in that it has not been represented in the house of delegates, owing to the fact that appointees have found it impossible to get away at the time of the state meeting. It was suggested that the society pay the expenses of the delegate and thus make the position a little less burdensome. This is the rule with some of the county societies.

Here is a situation that I thought you might make use of in a general way to show the good arising from membership and affiliation with the "brethren." We have lately had an application from a doctor who has resided in one of our towns in this county for about two years and did not during that time associate himself with the society. Lately he has decided to remove to a distant state and he finds that it is very essential that he have the recommendation from his local county society in order to get a certificate from the board of health of the state in which he proposes to locate. According to our rules we keep a name before our board of censors for a period of three months before it is voted upon. In this instance the doctor is ready to make his change in location and does not want to wait the three months, at which time his application will be voted upon. I think this is a very good rule for boards of health to adopt and it would be the means of causing an increased interest in the local county society.

Faternally yours,

J. SHIELDON CLARK, Secretary.

VERMILION COUNTY

The Vermilion County Medical Society was called to order in the city council chamber, May 13, 1912, by President L. B. Russell, at 8:15 p. m. The minutes of the March and April meetings were read and approved as read. The legislative committee reported a resolution to be sent to Senator Owen, of Oklahoma, at Washington, D. C., as follows:

Resolved, That the Vermilion County Medical Society puts itself on record as favoring the passage of the Owen "Public Health Bill" known as Senate Bill No. 1. This society, numbering 91 members, is made up of physicians graduating from the Eclectic and Homeopathic, as well as the regular schools, which fact fully disposes of the claims of the opposition that the regulars are seeking partisan advantage in the bill.

Resolved, That this action of this society be made known to senator Owen at once.

DR. LEROY JONES,

DR. R. A. CLOYD,

DR. J. E. P. BUTZ,

Committee on Medical Legislation.

A motion was carried to have the secretary communicate this resolution to Senator Owen at once.

A communication from Hugh P. Stevens, editor and publisher of the *Danville Record*, asking the society to endorse the policy he is pursuing, viz., that he does not accept for advertising material any patent medicine, fake cure, deceiving devices or anything which tends to jeopardize the welfare of the community but on the other hand will aid in elevating the moral and intellectual capacity of the community.

A motion was made by Dr. F. M. Cloyd to table the communication till there is a fuller attendance; seconded by Dr. E. E. Clark. After debating the question Dr. Cooley moved to amend the original motion by making it read: "That the communication be answered by the secretary endorsing the policy set forth by the

author of the communication." This was seconded by Dr. Leroy Jones. Voted to carry the amendment. Then carried the original motion as amended.

Dr. L. S. Landauer read a very able and instructive paper on "Quarantine." Dr. F. P. Johnson was not present to read his paper on "Sanitation." Dr. Leroy Jones read his most excellent paper. A lively discussion followed: Dr. Becker opened the discussion in a very practical talk.

Members present: Drs. Dale, R. W. and F. M. Cloyd, Cooley, Landauer, G. L. Williamson, Clark, Leroy and Solomon Jones, Winslow, Litzbach, Taylor, Becker and President Dr. L. B. Russell. Adjourned.

SOLOMON JONES, Secretary.

Book Notice

THE STORY OF A DOCTOR'S TELEPHONE TOLD BY HIS WIFE. By Ellen M. Firebaugh, Boston, Mass. The Roxburgh Publishing Company. Bound in English Silk-Finish Cloth. Decorative Covers. Price \$1.25. New York City, The Baker & Taylor Co. Philadelphia, F. A. Davis Co.

Mrs. Dr. Firebaugh has for the second time taken up the home incidents of a practicing physician in a small town of Illinois, and placed them in the printed page for the entertainment and instruction of the world. Mrs. Firebaugh has genuine literary talent, a touch of that genius that made Burns one of the great literary characters of Scotland, and Dickens the favorite of the English speaking world. We mean by this of course, that she can make the ordinary incidents of life interesting and pathetic. As she well says, the telephone has introduced a new era into the practice of medicine, and while the peace and comfort of the doctor's neighbors has increased, the rest and tranquility of the physician's home has a tendency to disappear.

This book should be read by every doctor's wife and patient. It will teach both many homely lessons and do much to introduce that reign of common good sense so sadly lacking in the busy world. We owe a vote of thanks to Mrs. Firebaugh which should be repaid by placing this volume on every waiting-room table.

PSYCHOTHERAPY. Including the history of the use of mental influence, directly and indirectly, in healing and the principles for the application of energies derived from the mind to the treatment of disease. By James J. Walsh, M.D., Ph.D., dean and professor of functional nervous diseases and of the history of medicine at Fordham University School of Medicine, and of physiological psychology at the Cathedral College, New York; Fellow of New York Academy of Medicine; member A. M. A., A. A. A. S., New York State Medical Society, German Society for the History of Medicine and the Physical Sciences, New Orleans Parish Medical Society, St. Louis Medical History Club, etc. New York and London. D. Appleton and Company, 1912.

In this work Professor Walsh has undertaken to unravel that most tangled chain of medical practice—Psychotherapy. He frankly acknowledges the difficulty of the subject, and how liable it is to be misunderstood and abused. He appreciates well how hopeless it would be to make a perfectly satisfactory text-book of so large a subject at the first attempt. The present volume is founded, however, on considerable experience, on wide reading in the subject, and on much reflection on its problems. It is offered to those who are interested in the old new department of psychotherapy until a better one is available.

Probably no one is in better position to develop this subject than Dr. Walsh, and it is certain that he has worked out a text-book which will be of great value to every practitioner. We commend the book with the utmost confidence in its value.

NEWS OF THE STATE

NEWS

— The Chicago Medical Society elected the following officers June 18: president, Dr. Jacob Frank; secretary, Dr. P. J. H. Farrell.

— The Chicago Medical Woman's Club elected the following officers June 12: president, Dr. Effie L. Lodbell; secretary, Dr. Sadie May Adair.

— A building permit has been issued to the Garfield Park Sanatorium for a three story brick building to be used as a hospital, to cost \$3,000.

— Dr. Maud Nickols of Urbana has taken up the work of visiting and advising persons afflicted with tuberculosis, lately resigned by Dr. Carrie N. White.

— The Lynde Hospital, Chicago, formerly known as the medical department of Gad's Hill Center, was the beneficiary of the performance at the Cohan Grand Opera House, June 18.

— The Whiteside Public Hospital has been taken over by the city of Sterling and will hereafter be a municipal hospital with accommodation for between forty and fifty patients. Dr. S. S. Kehr is chairman of the medical board.

— At the alumni banquet of Northwestern University Medical School, June 10, Dean Edwards announced that a fellowship fund for research work in tuberculosis and infectious diseases had been donated to the institution by James A. Patton, Evanston.

— Cook County has planned to install hundreds of tents for the tuberculosis patients at the County Institution, Oak Forest. The health authorities are making a systematic canvass for patients in the early stages of the disease in order to increase the effectiveness of prompt treatment.

— The Lake View Hospital Association announces the completion of its new hospital at 4424 Clarendon Avenue with a capacity of fifty-five beds. The staff consists of Drs. Gilbert H. Wynekoop, Charles I. Wynekeep and Emil E. Torell, surgeons; Drs. Anders Frick, F. Eldridge Wynekoop, Seth Wicks, physicians; Dr. Alfred N. Murray, eye, ear, nose and throat; Dr. E. O. Benson, diseases of children; Dr. John W. Birk, obstetrics and gynecology, and Clyde H. Warner, D.D.S.

— The annual meeting of the Chicago Medico-Legal Society, held June 1, 1912, resulted in the election of Dr. E. J. Doering, president; Dr. Henry T. Byford, first vice-president; Dr. Carl Wagner, second vice-president; Dr. Joseph Matteson, treasurer, and Dr. William L. Baum, secretary. The next general meeting of this society will be held the third week in November next. Dr. William L. Baum, Dean Walter T. Sumner and Dr. L. E. Schmidt will be among the speakers selected for this occasion.

—**RABID SQUIRREL ATTACKS AND SERIOUSLY INJURES A TENNESSEE GIRL.**—Memphis, Tenn., May 30.—Residents of Overt Park, this city, to-night are aiding the police in searching for a mad squirrel that attacked a 16-year-old high school girl. The young woman fought hard against her nimble assailant and finally escaped to her home nearby where, weakened from the loss of blood, she fainted on the door step. Two small boys in the same section to-day told their parents of a similar attack. Edna Smith, the girl attacked, is under treatment on the assumption that the squirrel is afflicted with rabies.

—At the annual meeting of the Association of the Medical Reserve Corps, U. S. A., Illinois Division, the following officers were elected: First Lieutenant E. J. Doering, president; First Lieutenant Samuel C. Stanton, vice-president; First Lieutenant John Allen Hornsby, secretary and treasurer; First Lieutenants Jacob Frank and Thomas J. Sullivan were elected councilors, vice First Lieutenants D. A. K. Steele and A. E. Halstead whose terms expired. Colonel J. M. Bannister of the U. S. Army delivered the address of the evening on the "Duties of the Medical Officer in the Field." A vote of thanks was extended to Colonel J. M. Bannister for his splendid address and also to the retiring president Frank Billings.

—A privately founded laboratory for child study has been opened in the Peoples Gas Building, Suite 1412. It will be available by appointment for the application of scientific principles to the measurement of the physical and mental condition of the child. This laboratory does not comprehend the treatment of disease, only recommendations for developing to an ideal the physical and correlated mental or psychic side of children. Physicians sending children for such examination will be furnished duplicate reports showing ratios of development of the whole body regionally so as to indicate at a glance whether or not for any part of their body they are abnormally developed for their years, race, sex and for their social status. Recommendations for symmetrical growth and development will be outlined. Dr. MacMillan, who is in charge of the child study department of the Chicago Board of Education and who assisted and followed Dr. Christopher in this work, will supervise this laboratory, devoting time outside of Board of Education duties for that purpose. Adequate assistants will be employed to carry out the work in all details. Some of the manifest defects amenable to correction are symmetrical physical growth, unbalanced mental development, defects of speech, delayed maturation and pronounced precocity. Appointments may be made by telephone or by post at any time. Telephone, Randolph 4893. The laboratory has been financed for a year and it is hoped that the demand will justify its existence and its continuance.

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ORIGINAL ARTICLES

PUBLIC CARE OF THE INSANE AND MENTALLY DEFECTIVE

PREVENTION AND AFTER-CARE — TWO NEW PUBLIC DUTIES *

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Alienist, Board of Administration of Illinois

SPRINGFIELD, ILL.

The more we study all of the conditions contributing to and forming a part of the fundamental factors to be considered in the problems of the prevention of mental disorders and the after-care of the insane, the more impressed we become with the correlation of biology and sociology in the discernment of the factors entering into these most important questions of to-day. That vital biologic phenomena differentiate themselves and social phenomena of equal value are present in each clinical problem, is strikingly shown at the bedside, in the study of mental disease, and in individual study of defectives. My observations have long since confirmed the dictum of Herbert Spencer that "there exists no social phenomenon which has not its roots in the phenomena of life itself." Further, clinical observations, when collected in statistical data, teach us that societies, no less than individuals, are subjected to the same great laws which govern race preservation.

In other words, the survival of the fittest is a fact and not a fancy when applied to families, communities, commonwealths and nations, as well as to individuals.

The great factors unceasingly at work which maintain race preservation, which, while essentially biologic, are also social in their selection and evolution, are variability, heredity, excessive fecundity and selection. These factors in their interaction and correlation are the silent agencies at work, which seek not only to preserve and perpetuate the race of man, but to give the fittest social conditions in his evolution.

* Read before the Third Annual Conference of the National Association of Public Relief Officials, Cleveland, Ohio, June 12, 1912.

VARIABILITY

Variability is the universal law of organic life found throughout the gamut of life from the microorganism to and including man.

Darwin, in his "Origin of Species," and DeVries, in his comparatively recent "Theory of Mutations,"¹ together with the accumulated facts of the new science of eugenics,² all point to variability as biologic phenomena to be always present and always in evidence in the analysis of an individual case or collectively in families, species, communities, and in nations.

Variability, as observed in organic life, is well stated in the words of Brooks: "Living beings do not exhibit unity and diversity, but unity in diversity."

Fluctuating variations do not occur without a reason, but it is only within the past decade that laws which hold good have been formulated whereby we can anticipate more scientifically these variations, especially in plant life and in breeding domestic animals. DeVries, in his rediscovery of Mendel's law of heredity and its application, opened the way to the now intensive experimental work that is going on in the study of genetics.

We, as public officers, having to deal with the insane, feeble-minded and other defectives, are more concerned, perhaps, with the fluctuating variations which break away from the normal type on the regressive side of the line, from which types are recruited the individuals who become public wards of the state. The applicability of the study of genetics to these problems is one of the most promising new features of social pathology wherein biology again shows its important correlation with sociology.

HEREDITY

It is through the avenues of life, guided by the great laws of heredity, that we expect to reach the goal of our research; the fluctuating variations in humanity. Heredity is the "central theme of Biology"; it has always been conspicuous as a causative or etiologic factor in mental disorders. Thompson³ well says "there are no scientific problems of greater human interest than those of heredity, that is to say, the genetic relation between successive generations."

Castle⁴ of Harvard, one of our foremost research workers to-day in heredity, says: "The evolutionary idea has forced man to consider the probable future of his own race on earth and to take measures to control the future, a matter he has previously left largely to fate."

In order to continue and enlarge on this most important phase of the subject of prevention, and to give a working knowledge that will lead to more scientific consideration of man in his breeding, it is necessary for me to briefly touch on some of the accepted facts formulated in the laws of Weismann and of Mendel, which laws largely govern our modern science of genetics.

1. Thompson: Heredity, p. 90, Putnam, 1908.

2. Francis Galton: Eugenics; Its Definition, Scope and Aims, Macmillan & Co., 1905.

3. Thompson: Heredity, Putnam, 1908.

4. Heredity, D. Appleton & Co., 1911.

Weismann's theory⁵ of the continuity of the germ-plasm is one of the main pillars of modern genetics. "Germ-plasm is the specific substance of definite chemical and molecular structure which is the bearer of the hereditary qualities." In the development of the individual a part of the germ-plasm contained in the parent germ cell is not used up in the construction of the body of the offspring, but is reserved unchanged for the formation of germ cells of the following generation. The germ cells are the real immortal part of man; they are living chips off of the germ-plasm which produced the parents. A germ-plasm is not formed afresh in every germ cell; it is by cell division the plasm is handed on by the germ cells. It is thus shown that "germ-plasm is continuous from age to age." It is therefore necessary that we know the family stock, as well as the individual, when we study cases of mental disorder. We are all chips off of the family tree — instead of the family block.

Mendel's law of heredity⁶ includes three principles:

1. The existence of unit characters. By that is meant that the total inheritance of an individual is made of unit characters, each of which is independent and capable of being studied alone and without reference to any of the other units.

2. Dominance, in which in the inheritance of unit characters there is supposed to exist in the germ-plasm certain substance which is the determiner or dominant character.

As regards unit characters they may be in any individual dominant or recessive; dominant when the unit character, as predetermined by the determiner, is in evidence; recessive when not conspicuous because of the absence in the germ-plasm of the determiner.

3. Segregation, which according to Castle means segregation of the units contributed by the respective parents and found among the gametes formed by the offspring. The principles of dominance and segregation apply to the inheritance of many characters in animals and plants.

Bateson says "segregation was the essential discovery which Mendel made and we now know it is one of the normal phenomena of Nature." It is segregation which determines the regularity perceptible in the hereditary transmission of differences. It defines the units concerned in the constitution of organisms and provides the clue by which an analysis of the complex heterogeneity of living forms may be begun. We are especially interested in the research work pertaining to this feature of the laws of heredity. It is by the study of segregable units that we will be able to formulate observations to guide us in the study of prevention of feeble mindedness, epilepsy, deaf-mutism, insanity, etc. Whether or not feeble mindedness of certain types is a unit character, or that deaf-mutism, in certain forms, is a unit character seems to be one of the solutions which these studies promise to reveal to us. Human breeding, guided by such information, will in due time be regulated more insistently and consistently by law. The trend of modern inquiry, under the stimulus of the

5. Weismann: *The Evolutionary Theory*, 2 vols., Arnold, 1904.

6. Bateson: *Mendel's Principles of Heredity*, 1904.

American Breeders Associations, is to make the family pedigree a virile factor in individual study both from the standpoint of biology and sociology.

The mendelian methods are applicable to a wide range of knowledge useful not only in a clinical way, but in the social pathologic problems with which we have to deal.

As an example take the recent studies of Rosanoff and Orr,⁷ a most useful and constructive contribution to the literature on heredity in mental disorders. The clinical observations of these workers in this new field of research show the relationship of the neuropathic equivalents with their very varied manifestations as factors in etiology of mental disorders.

The neuropathic constitution is shown by them to be transmitted from generation to generation in the form of a trait, which is, in the mendelian sense, recessive to the normal condition.

Neuropathic conditions show only in one-fourth of the cases indications for commitments to sanatoriums or public institutions. The total incidence on neuropathic conditions may be roughly estimated as affecting between 1.5 and 2 per cent. of the general population.

It is further estimated that about 30 per cent. of the general population without being actually neuropathic, carry neuropathic taint from their ancestors and are capable under certain conditions of transmitting the neuropathic make-up to their progeny.

I would have liked to quote all of the conclusions of these observers. Sufficient has, however, been shown to confirm the more or less empirical observations made by myself and also noted in the statistical data of institutional reports, that the hereditary factor is actively present in about one-fourth of all cases and potentially present in from one-third to one-half of all cases. These observations, too, assist in teaching us the need of the family pedigree studied in detail, if we ever expect to use efficient methods of prevention found in the regulation of marriage and births.

I could go further in commenting on heredity, showing the contributory knowledge which the laboratory workers, the statistician, the experimentalist, the sociologist in field work and others are gleaning for us from the waiting fields of research, but time will not permit. I want to emphasize, however, that it is such knowledge which now does, and will, more so, in the future, give us positive hope to regulate by prevention of the breeding of defectives. Further, the information we now have enables us to give council regarding the mating in marriage of individuals who recognize their duty to posterity and are willing to be guided by forethought. I, for one, hope to see the field workers from the Eugenics Section of the American Breeders Association attached to every hospital and institution where family pedigrees and social factors are paramount in solving the problems of prevention.

It is only by such studies that we can recognize the workings of the next great law, that of selection, in our social and biologic problems.

7. *Am. Journal of Insanity*, lxxviii, No. 2, p. 221.

SELECTION

Selection is constantly at work both through the means of natural selection as determined by Nature, and artificial selection as determined by man. We have evidences of the results of selection at least, even if we do not know all of the ways and means of the working of the laws of selection. These evidences are to be noted in the accumulation and custodial care of the insane in our institutions; in the waiting lists at our institutions for feeble minded and the number of delinquent and dependent boys and girls in our state training schools. These evidences also show that selection plays a rôle in sociology no less important than in biology. Natural selection works largely through disease as the agent. We have but to read the history of civilization to note the remote result that every race is resistant to every disease in proportion to the length and severity of its past experience to it. Archdall Reid,⁸ in his masterly book on "Heredity," shows that natural and artificial selection are essentially unlike. Nature and man do not select the same class of unit characters; and disease is especially stringent as a selective agent. Through it the weak are weeded out and the survivors, by reason of developed resistance to disease, adapt themselves to conditions under which they must live. It follows, therefore, that Reid's dictum is true, that the only progress, the only considerable racial progress that civilized human races undergo, is one against disease.

To make progress, the individual, the family, the community, the race must be alert to the modern propaganda of preventive medicine and its wondrous victories, especially along the lines of the infectious diseases. Life, left to itself, will not enter the path of progress and individuals as biologic units and communities as social units will not progress unless kept constantly under the stimulus of action, of research, of applied, useful, scientific knowledge.

Even in spite of such knowledge the lethal influence of adverse local social conditions permits the tolerance of agencies which paralyze social power and usefulness. These are found in the prevalence of alcoholism, syphilis, tuberculosis and infectious diseases in general.

The powerful agencies just mentioned are selective in separating the fit from the unfit. The waste heap of humanity (as some one calls the unfit) accumulated through these agencies, are found as custodial charges in state hospitals and other institutions; as delinquents in workhouses, bridewells, jails, etc., and dependents in county homes, almshouses, etc., all evidences of the working of the laws of selection.

The social misery thus represented is within the possibilities of prevention, or at least regulation, through educational ways and means under the guidance of the new propaganda of prevention, the "war cry" of to-day.

To prevent the multiplication of biologically and morally degenerate classes from which most such cases are recruited, is one of the newer problems given us as a possibility in the ideals, at least, of the new

8. Heredity: Chapman and Hall, London, 1905.

science of eugenics. We have not the time to consider this phase of the subject, viz., the checking of reproduction of the lower class of population as a whole. We must, however, not forget in our consideration of the problem of regulation of the multiplication of the unfit, that the biologic factor, as found in the germ-plasm, is the essential, the paramount factor for consideration. In other words, it is the stock as well as the individual which must be regulated.

Our great institutions will always be filled, our city courts crowded, and the defectives with all of the problems of social misery which they entail, be ever a constant source of demand and consideration on the part of public agencies for relief, so long as the multiplication of the unfit and the undesirable continues. "Physiologic misery, moral misery and economic misery" are the trail of the unfit which we, as public officers, must follow in our endeavor to give the relief which modern humanitarianism demands.

Underlying every social problem we find a moral problem, and underlying all problems we find, as Huxley says, the financial or economic basis. We are thus brought face to face with the imperative necessity of supplying, as Hill⁹ says, a "suprarational" principle, capable of coordinating all of the activities of the heterogeneous elements composing society and guiding them toward the realization of a common aim.

Solidarity, Hill remarks, cannot be attained in a materialistic society where each class shuffles for himself. The masses who toil will never interest themselves in the welfare of society so long as economic conditions are unjust; in order to interest the masses their interests must be as paramount as the interests of society as a whole; they must be shareholders and enter into this spirit of cooperation to promote social happiness (the ultimate aim of all agencies); to give moral and physiologic relief to misery and to solve the thousands of individual problems ever confronting the workers in the social service of to-day. The power of expansion of social evolution, of social fitness, is in the last analysis found in the necessity for a spiritual organization wherein will be recognized the value of individual life, but which, above all, will regulate that individual life to best subserve the interests of the race as a whole.

This is the "suprarational ideal" — the principle on which is founded the ways and means of prevention of mental disease.

We must recognize that mental diseases, while having definite causes, are nevertheless the results of selective agencies at work for the preservation of the species man, but we can regulate conflict which both biologically and socially leads to disintegration and death.

To give application to our "suprarational ideal" requires that we study all ways and means which promote race expansion, again considering the biologic and social aspects of the problems. Social fitness will be found to be as necessary as organic fitness and that the greatest agency for promoting and maintaining social fitness will be found in religion. Biology can select the physical factors to be preserved, and preventive medicine will lead the way to preserve health and well-being,

9. Chatterton Hill: *Heredity and Selection in Sociology*, A. & C. Black, 1907.

but the moral factors, ever and truly great powers for good, must be conserved and expanded through the religious training.

Religion is an imperative necessity to man's welfare in preserving the integrity of social fitness and race development. Chatterton Hill well says: "In order to realize expansion, in order to go forth conquering and to conquer, a nation must possess an adequate spiritual organization guaranteeing its integration and spirituality; but, on the other hand, a nation capable of great expansion is necessarily a nation of biologic superiority."

The newer phases of our problems, then, are reducible to the promulgation of the propaganda of prevention as applied to disease, the new science of eugenics¹⁰ as applied to the multiplication of the fit, the science of sociology as applied to social fitness, and the cultivation of the traditional powers of religion in preserving moral integrity and implanting practical ideals in right living.

AFTER-CARE

Prognosis in mental diseases is the one great unsolvable problem of clinical psychiatry. It is an individual problem, dependent on close scrutiny and analysis of all factors which enter into the causes of mental disease, of which heredity, environment, previous health-history (including accidents) the possible presence of syphilis, the history of habits of which alcoholism, drug usage, modes of living, etc., are the essential and prominent active factors in causation. Without this full knowledge of causes — a full knowledge of the family tree, the ways of living and the doings of the individual, we cannot forecast the future. Even with this knowledge every alienist of experience knows how limited is his own range in attempting to give a prognosis. He does know, however, how necessary it is in an individual case, when apparent recovery occurs, to use every means possible to safeguard that individual from causes which may lead to recurrence of active mental symptoms, with the chances being that a more prolonged and perhaps more severe attack will result, and that mental death, "dementia," be the finality.

After-care, therefore, is a necessity in mental disease just as it is in other diseases, and after surgical procedures.

The modern surgeon looks on care after an operation as requiring as much consideration as the operation itself.

The modern physician, under the stimulus of such an active clinician as Richard Cabot¹¹ of Boston, likewise gives great thought to the after-care of his patients. Even after acute illness has subsided, especially considerate is he of those individuals suffering from chronic illness, who, from time to time, need hospital care or who, as semi-invalids, need watchful care and guidance in their homes.

It is in the large public hospitals of the metropolis that after-care has been developed in the problems of the sick. Social service is now recognized as the right arm of the great after-care movement inaugurated

10. Charles B. Davenport: *Heredity in Relation to Eugenics*, Holt, 1911.

11. Richard Cabot: *Social Service*, 1910.

but a few years ago in Boston by Cabot, and now a feature in most metropolitan hospitals. This great movement seeks to give care to the individual in all of the demands which sickness entails in a family. The social worker is the agent to seek and analyze information which will contribute to the recovery and promote the general welfare of the patient. The patient is studied carefully as one who is sick; he is studied as an individual unit in the environments where he lives; he is studied as a social unit with reference to the welfare of the other individuals with whom he comes in contact and with reference to the multiplication of his kind through regulation of births in his family. In short, after-care has become a vital factor in the social and medical problems of to-day. What has been done in medicine in general can be done in mental medicine in particular. Some attention has been given to the needs of mental cases, especially in New York¹² and Connecticut,¹³ and other states have tentative measures, largely administered through private organizations, for giving aid in "after-care" of mental cases. "The Society of Mental Hygiene" has made this one of the pillars in its organization. Illinois has incorporated in the law creating the Board of Administration a clause providing in a general way for after-care, but thus far, because of lack of funds, this provision of the law has not become active.

The after-care problems to be solved will, in my judgment, require trained social workers, just as in the social service work of the metropolitan general hospitals.

We need workers who can analyze the needs of each individual case, who can not only see but direct, who can understand the potential powers of environment and modes of living as agencies which mar or uplift the patient; who know the principles of heredity and who can observe the workings of these laws in a general way according to their modern mendelian application; who know the dangers of venereal diseases, of diseases in general, of the ravages of alcoholism and the power it possesses in race degeneracy.

After-care demands all of such information and more; it demands a spirit of service, of true missionary spirit and belief in the powers of the moral regeneracy of the individual.

Social evolution, biologic efficiency, religious inspiration and the uplift which hope generated through wise consideration of all these agencies will give confidence and well-being to that great class, the neuropathic, from whom are recruited, directly or indirectly, at least one-half of our patients.

Again, after-care will require the cultivation of public opinion, leading to the regulation of marriage of the feeble-minded, the epileptic, the alcoholic, the infected and otherwise unfit individuals. It means, too, the segregation of the feeble-minded women during the child-bearing period of life. It means state care of the epileptic and ultimately, I believe, of alcoholics. Each state should see to it that the after-care movement may be made effective and the organization, however inade-

12. Hoch: *Social Side of Psychiatry*, Report State Board Charities, N. Y., 1910.

13. Beers: *id.*, p. 838.

quate, be at least started to make possible the ways for a larger and broader field actively along this line in the future.

The new phases of prevention and after-care are much alike in that they embrace all problems coming within their scope as correlated through the sciences of biology and sociology. To solve them means years of patient educational service, reaching, most of all, the masses and then individualizing to meet the wants of each particular case.

We, as public officers, must be in touch with all of the lines of advancement which seek to promote social evolution, and of these, prevention and after-care stand prominently forth as potential agencies needing our earnest consideration.

CLINICAL SIGNIFICANCE OF REFLEXES *

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CHEROKEE, IOWA

As aids to diagnosis in determining various nervous and sometimes mental disorders, the clinical findings as manifested by the reflexes are of the utmost importance. The percussion hammer is to the neurologist of to-day as was calomel to the old-time practitioner — one and inseparable — for by constant study and observation, neurologists have found that in the various disorders of the nervous system the reflexes are the best indices at their command by which to gauge the nature and extent of abnormal change in nervous structure. It must not be misconstrued to mean that the reflexes are constant criteria and are always to be found the same in seemingly similar conditions, for such is not the case, but there are cases in which some changes in reflex activity are fairly constant factors and when so found to be present are considered to be almost pathognomonic of certain disorders. A positive diagnosis of a nervous disorder cannot justly be made on the presence or absence of a single reflex, but when several reflexes are changed from the normal, these changes together with other findings are of the utmost value in attempting to solve the nervous lesion.

I know of no more inviting field of study than the solution of a nervous problem, for there is so much to be considered when nerve tissue is deranged, and yet so often the general practitioner apparently shirks from undertaking to diagnose his nervous cases, perhaps because he feels that his knowledge of neurology is too limited to permit him to properly elicit and interpret the nervous phenomena present. The field of neurology is indeed a broad one, and the intricacies of the nervous mechanism cannot be mastered in a day, but the fundamental principles of neurologic examination as manifested by various reflex activities can with a little study be well enough understood to enable one unskilled in such work to get a fairly good working idea of the stability of the nervous system. It

* Read in a Symposium on Mental Diseases, at Hotel La Salle, Chicago, April 17, 1912.

is with this object in view that I shall endeavor to present in as brief a manner as possible, the reflexes mostly used in the examination of the nervous system, the method of their elicitation, and their value as means of diagnosis.

Before presenting the various reflexes for your consideration, I wish to briefly call attention to the anatomophysiologic mechanism of a reflex arc, for a proper knowledge of its constituents is essential for the understanding of reflex action. The act in its simplest form consists of the following phenomenon: An impulse following a peripheral excitation is transmitted over sensory fibers through the corresponding posterior spinal root into the spinal cord, where by means of an intercommunicating fiber, it reaches the cells in the anterior horn of the cord. From these cornual cells an efferent impulse is sent over motor axons (spinomuscular neuron) which produces a contraction of the muscle fibers in which those axons terminate. The action of this lower segment is governed by the cortical cells in the motor area of the brain through the corticospinal neurons, which terminate about the gray matter in the anterior horns of the cord. Lesions involving either the sensory or motor elements of the reflex arc produce a diminution or abolition of the reflex act, whereas if the corticospinal element is interfered with, its governing action is inhibited and the reflex act is increased or exaggerated. Some reflexes occur unconsciously, as pupillary and vasomotor phenomena, peristalsis, etc., or the element of consciousness may be added when the afferent impulse, besides exciting a reflex motor action, sends part of its impulse upward through the cord to the general sensation area in the opposite cortex. One of the chief characteristics of a reflex lies in an automatic execution of a movement, irrespective of the individual's will. Thus it will be seen that motor and sensory fibers, ganglia and nerve cells are brought into a harmonious relationship, one with another, independent of will power, in producing the simple act of reflex action. For clinical purposes three varieties of reflex action are ordinarily considered, namely, visceral reflexes, superficial or skin reflexes and deep or tendon reflexes.

VISCERAL AND PUPILLARY REFLEXES

The visceral reflexes are not of any great moment since they have to do largely with the functions performed by the various organs whose musculature is incapable of direct voluntary restraint, inasmuch as it is under the control of the sympathetic system. The rectal, anal, vesical, scrotal, uterine and ciliospinal reflexes all come under this grouping, but the latter is perhaps the one most often used in examinations. It is elicited by pinching or scratching the skin of the neck, which causes dilatation of the corresponding pupil and merely indicates that the cervical sympathetic branch is intact. Injury to this branch is usually followed on the affected side by myosis, pseudoptosis, endophthalmos, and of course loss of the reflex itself.

The pupillary reflexes, while not considered as belonging to this group, since they occupy somewhat of a special category of their own, are perhaps in some respects rather analogons to a deep reflex. However, they will be

considered at this time. Normally, when a good light is thrown directly on the previously shaded irides, they contract rather briskly and equally, producing the ordinary pupillary reflex, and any departure from this should be considered as abnormal. If one eye is shaded by a card or observer's hand and the other eye exposed to the light, the iris of the shaded eye should act in unison with its fellow, producing the consensual reflex. Not infrequently the disturbance of this reflex is one of the early signs of paresis. Total loss of reflex action to light without disturbance of the power of accommodation and convergence (reflex iridoplegia) produces the Argyll Robertson pupil, which is largely considered as pathognomonic of cerebrospinal syphilis, and those parasymphilitic affections, *tabes dorsalis* and *parcisis*. Early in some cases of paresis, the pupils are unequal and irregular in outline, the irregularity shifting from time to time, and Dercum¹ holds that this latter condition when present should be considered but a forerunner of the Argyll Robertson phenomenon. The converse of this phenomenon is found in conditions where the pupil reacts to light but not to accommodation and convergence (cycloplegia) and this condition is sometimes one of the sequelæ following diphtheritic infections. Other evidences of a postdiphtheritic neuritis, as paralysis of the external ocular muscles, or of the palate, lost knee-jerks, etc., however, will help to make the diagnosis plain. Total loss of reflex action to light, accommodation and convergence (total iridoplegia) may sometimes also be found and when present usually points, as does also the loss of reaction to accommodation and convergence, to some nuclear degeneration of the motor oculi nerve.

The Wernicke pupillary inaction sign as a means of diagnosis in homonymous lateral hemianopsia between lesions anterior and posterior to the primary optical centers is mentioned only in passing, inasmuch as the test is too delicate for practical purposes and its results are reliable only in the hands of a skilled ophthalmologist.

CUTANEOUS REFLEXES

The superficial reflexes are also known as skin or cutaneous reflexes, and are movements obtained by slight stimulation of certain areas of the skin or mucous membrane. In certain animals, as the horse, a skin reflex can be elicited by irritating almost any portion of the hide, especially the trunk, but in man the skin is less mobile and hence it is only by irritating certain areas that these reflexes can usually be obtained. In attempting to elicit a skin reflex the stimulus must never be too strong as it may produce a reflex so active in character as to involve nearly all the voluntary muscles of the body and hence defeat the object sought, i. e., the presence or absence of cutaneous reaction.

Any change from the normal in the conjunctival, pharyngeal and palatal reflexes is of importance in all cases in which hysteria is suspected and the absence or presence of the same should be tested. We know that in this functional nervous disorder, which at times simulates even the grossest of organic lesions, that certain mucous membrane and skin areas

1. Dercum, F. X.: Clinical Lectures, Jefferson Med. Coll.

are not infrequently anesthetic. The anesthesia may involve one, two or even all the extremities, sometimes mapping them out in a glove- or stockinglike arrangement, or it may involve the entire half of the body, the anesthetic area abruptly ending at the median line. Certain hysterogenetic zones may also be present as indicated by excessive tenderness or even pain when pressure is made beneath the mammae and over the ovaries. The cornea may be anesthetic and the conjunctival reflex abolished, as indicated by the failure of the orbicularis oculi to contract when the cornea is touched by a tuft of cotton. The pharynx may be anesthetic and fail to contract when its posterior wall is touched by some foreign object, or the soft palate for a similar reason is not elevated when it is irritated by a probe. The loss of these reflexes alone is not pathognomonic of a hysterical affection, for the corneal reflex is sometimes diminished or abolished on the side corresponding to the paralysis in cases of apoplexy, and the soft palate may be paralyzed following a diphtheritic infection as before mentioned, but their absence when accompanied by other cardinal findings, such as glove- or stockinglike anesthesia, hemianesthesia, hysterogenetic zones, reversal of the color fields, etc., at once makes the diagnosis of hysteria evident.

The epigastric reflex is obtained by stroking the skin downward from the nipple, producing ordinarily a dimpling of the epigastrium on the side stimulated, and signifies that the segmental level of the cord between the seventh and ninth thoracic nerves is intact.

The abdominal reflex is elicited by gently stroking the skin downward from the costal margins which normally produces contraction of the abdominal muscles on the corresponding side. Its segmental level is found between the eleventh thoracic and first lumbar spinal nerves. It is said that in certain acute abdominal conditions,² notably in acute appendicitis and enteric fever, that this reflex is often absent, and Strümpbell and Müller³ have pointed out that in young adults whose abdominal walls are apparently normal, and in whom no edema or excessive obesity is present, that its absence is strongly suggestive of disseminated sclerosis.

Stroking the inner and upper part of the thigh produces the cremasteric reflex, which is the drawing or pulling up of the testicle on the corresponding side due to the contraction of the cremasteric muscle, and indicates that the segmental level of the cord between the first and second lumbar spinal nerves is intact. In old men this reflex is usually sluggish or apparently absent, but in such cases it can usually be elicited by making sudden firm pressure backward against the sartorius muscle in the region of Hunter's canal, or against the adductor tubercle of the femur. The statement is made that in cases of sciatic neuralgia this reflex is frequently exaggerated on the affected side.

The gluteal reflex is elicited by stroking the skin of the buttock which causes the gluteal muscles to contract; the superficial anal reflex is obtained by pricking or irritating the skin of the perineum, causing the

2. Rolleston: *Brain*, 1906, p. 99.

3. Müller, E.: *Neurol. Centralbl.*, 1905, p. 593.

external anal sphincter to contract. The segmental level of these reflexes is found in the fourth and fifth lumbar and in the fifth sacral and coccygeal segments, respectively.

Of all the superficial reflexes the plantar reflex is the one having the greatest practical importance. Ordinarily, when the skin of the plantar surface of the foot is irritated by drawing some foreign object along the sole from behind forward, there is prompt plantar flexion of the toes. Should the stimulation be too strong, contraction of the tensor fasciæ femoris, dorsiflexion of the ankle and even partly voluntary movements may take place, thus obscuring the movement of the toes. For this reason it is necessary to use care when endeavoring to elicit this reflex to apply a stimulus that is just sufficient to produce toe movements, and nothing more. This reflex, which is purely flexor in type, occurs only when the reflex arc is intact and when there is no irritation or interruption of the corticospinal element of the central nervous system. The fact that the governing influence of the upper motor neuron is necessary in order that the reflex be flexor in type, thus making it in one sense a cortical reflex, is now well known. for Babinski some fifteen years ago pointed out to the profession that in lesions involving the upper motor pathway, especially the pyramidal tracts, plantar stimulation produced extension of the toes, particularly the great toe. In testing for the extensor plantar reflex, the same care in applying stimulation to the sole must be observed as in testing for normal plantar flexion, else the movements of the great toe or toes may be obscured. The extensor movement of the great toe is somewhat slower than in normal flexion, and sometimes the other toes separate, as it were, assuming a fan-shape appearance — *phénomène d'éventail*. This reflex never occurs in health except in infancy, and is one of the most valuable signs we have in differentiating between the so-called functional and organic lesions of the nervous system.

The Gordon paradoxical flexor reflex has the same clinical significance as Babinski's phenomenon and is elicited by making firm pressure through the calf muscles onto the deep flexors beneath, producing extension of the great toe or of all the toes. This reflex is sometimes found in slight or beginning irritations of the upper motor pathway, and as has been pointed out elsewhere,⁴ may occur before a Babinski sign can be demonstrated, later being replaced by Babinski's phenomenon as the irritation increases. Its occurrence with a Babinski is the exception rather than the rule, for there is apparently a species of antagonism between these two reflexes.

Somewhat recently I called attention to a new method⁵ for eliciting the extensor toe reflex by percussion. In those cases in which the Babinski sign was present, I found that percussion at the base of the great toe would produce extension of this member, accompanied sometimes by extension of the remaining digits. The reflex is best obtained in the following manner: The muscles of the leg should be in a relaxed condition and the toes in a passive state. The skin overlying the upper surface of the first metatarsophalangeal articulation is struck with the pointed

4. Throckmorton, T. B.: N. Y. Med. Jour., Oct. 14, 1911, p. 786.

5. Throckmorton, T. B.: Jour. Am. Med. Assn., May 6, 1911, p. 1311.

end of a percussion hammer just to the inner side of the tendon of the extensor longus hallucis muscle. The force of the blow required will vary in different individuals, some requiring but a few light taps to produce extension of the toe, while others may require several fairly sharp blows before extension occurs. The amount of stimulation necessary to produce extension by my method apparently bears some ratio to the amount of plantar irritation necessary to produce Babinski's sign, for it has been my observation to find that in those cases in which extension to plantar stimulation readily occurred, only slight or moderate percussion force was needed to elicit the same phenomenon. In those cases in which the Babinski sign is only slight or somewhat indeterminate, extension of the toe may not follow the percussion blow, but close observation will usually reveal that the distal portion of the tendon of the extensor longus hallucis muscle stands out in more or less prominence, due to the slight contraction of the muscle. Sometimes extension of the great toe can be produced by striking the skin about the inner aspect of the first metatarsophalangeal joint, or by striking the skin overlying the first phalanx of the toe, but I have obtained the best results when the skin area first designated is percussed. There is no question but that the reflex is pathologic, but owing to the lack of a sufficient number of clinical observations, I am at present unable to state its value as a nervous phenomenon further than to point out its corroborative evidence showing that extensor toe reflexes are pathologic and are largely true skin reflexes in character.

The external malleolar phenomenon, or Chaddock's sign,⁶ is perhaps the most recent contribution to nervous diagnosis along the line of extensor toe reflexes. Chaddock has shown that sometimes in diseased or irritative conditions affecting the upper motor pathway, irritation of the skin just below the external malleolar process produces extension of the great toe or of all the toes with or without "fanning." He also states⁷ that he is convinced of the diagnostic importance of this sign in incipient stages of dementia paralytica (in eighty out of ninety-four cases it was found by him: Babinski only eleven times⁸), and is sure that it will also be found in a certain number of cases of dementia præcox. In a well-systematized report of a series of cases studied by him, Ingram⁹ states that he was fully able to substantiate the claims made by Chaddock, i. e., that the malleolar sign was equal in value to Babinski's sign; that it was a more delicate test, appearing earlier and frequently lasting longer than the Babinski; and that it appeared with the Babinski, whereas the Babinski did not occur without the Chaddock.

TENDON REFLEXES

The deep reflexes are also known as tendon reflexes, and are movements elicited usually by percussing tendons, thus producing a contraction of the muscle or group of muscles supplied by the tendon struck. The reaction of a tendon to a percussion stimulus varies from the normal

6. Chaddock, C. G.: *Interstate Med. Jour.*, July, 1911.

7. Chaddock, C. G.: *Jour. Missouri State Med. Assn.*, October, 1911.

8. Personal communication.

9. Ingram, Robert: *Lancet-Clinic*, Oct. 14, 1911, p. 398.

muscular contraction found in health, to an exaggerated condition present when the inhibitory action of the cortical cells in the motor area of the brain is interfered with through disease of the cells themselves or their axis cylinders, or to a diminished or even lost reaction when some part of the reflex arc proper is disrupted. It is generally accepted to-day that while the cutaneous reflexes originate from the cortex, the tendon reflexes are spinal in character, and hence the knowledge of the constituents of the spinal arc enables one to a great degree to trace out the lesion causing increased or diminished tendon reflexes. Increased tendon reaction is sometimes found in normal individuals whose nervous temperament is rather "high strung" or who are on a tension at the time of examination, and it may also be found in hysteria and in neurasthenia. Diminished or absent tendon jerks usually accompany diseased conditions of the gray matter in the anterior horns of the cord (anterior poliomyelitis), or of the motor nerve fibers leading from the cord to the periphery (peripheral neuritis), or of the posterior spinal roots and dorsal columns of the cord (tabes dorsalis).

While it is not within the province of this paper to elaborate on the disputed question as to whether or not the knee-jerk is a true reflex, there is no question but that for all practical purposes it can be taken as an index of the integrity of the reflex arc. This reflex is perhaps the one most often examined in neurologic tests, and the method of its elicitation depends largely on whether the individual undergoing examination is in the sitting posture, or reclining position. In the sitting posture, the usual manner of procedure is to direct that the knees be crossed and the thigh muscles relaxed, and outlining the patellar tendon between the thumb and finger of one hand to strike the tendon a blow sufficient to produce contraction of the quadriceps extensor muscle. If the jerk is diminished, concealed or apparently absent, a greater response can be obtained by the reinforcement method of Jendrassik in which the individual is told to look upward or close the eyes, to clasp one hand with the other, and to pull outwardly at the moment the tendon is struck. This method of procedure will make a feeble jerk more evident, having no effect, however, if the knee-jerk is pathologically absent, although it must not be forgotten that in 1 or 2 per cent of normal individuals, the knee-jerk is absent even by the reinforcement method. If in doubt as to the presence of the reflex, it has also been recommended¹⁰ that the palmar surface of one hand be placed over the vastus internus, or the palmar surface of the index finger of one hand be placed over the tendon and the dorsal surface of the finger struck with a percussion hammer.¹¹ In this manner the slightest contraction of the muscle or of the patellar tendon can be felt, whereas the contraction may be so slight as to entirely escape observation. In the reclining position, the usual method of testing for the reflex is to flex the leg moderately on the thigh which is supported by one hand while the patellar tendon is percussed. In endeavoring to elicit this reflex, or any other tendon reflex, care should always be taken to see that

10. Stewart, Purves: *Diag. of Nerv. Dis.*, Ed. 2, p. 306.

11. Eshner, A. A.: *Jour. Am. Med. Assn.*, Sept. 2, 1911, p. 793.

the musculature is absolutely relaxed, else a spasm or contraction of the same may retard or even "conceal" the reflex action. Exaggeration of the knee-jerk usually follows degenerative changes in the corticospinal neurons as seen in hemiplegia, spastic paraplegia, transverse myelitis, etc. However, it should be borne in mind that in a complete transverse myelitis or in a total transection of the cord from fracture and dislocation of the vertebræ, there will be abolition of all the deep reflexes below the lesion, but toe reflexes will usually be present which are extensor in type. The loss of the knee-jerk was at one time thought to be almost pathognomonic of tabes dorsalis and was known as Westphal's sign, because this noted neurologist first called attention to its absence in this disease. While it is true that this reflex is diminished or lost in the vast majority of tabetic cases, still it is also similarly affected in other diseases of the nervous system, some of which have already been mentioned, and is also absent in a small percentage of apparently healthy individuals.

The ankle-jerk also possesses great diagnostic significance. This reflex is best elicited by tapping the Achilles tendon while the patient is kneeling on a chair or other suitable object with his feet projecting well over the edge of the same, or if in the reclining position, by grasping the foot above the toes and raising the leg well in the air, which allows free access to the tendon. Having perfect relaxation of the calf muscles, sufficient tension can be made on the tendon by flexing or extending the ankle and by so doing the muscles can be "toned up," so to speak, to that point of greatest efficiency which will readily give contraction when the tendon is struck. In this manner I have sometimes satisfied myself as to the presence of the jerk by feeling the slight extension of the foot against the hand following the percussion of the tendon, whereas by other methods I could not assure myself as to whether the extension of the ankle was due to muscular contraction or to the force of a blow on a tendon which moved the ankle by mechanical means. Again, in some cases in which other findings were indicative of organic changes but in which clonic movements of the foot could not be readily obtained by the ordinary method of eliciting ankle-clonus, I have sometimes been able to produce clonic contractions by percussing the tendon and at the same time varying the tension on it by slightly flexing or extending the foot. In conditions involving the cord low down, as in sacral tabes, changes in the ankle-jerk may be present, whereas there will be preservation of the knee-jerk until the centers higher up are involved.

Organic involvement of the pyramidal tracts is by far the commonest cause of permanent exaggeration of the deep reflexes, and such conditions are not infrequently accompanied by a rhythmic series of muscular contractions produced by passively stretching a tendon, the contractions continuing as long as the tension is maintained on the tendon. I refer now to clonus. The commonest clinical variety of clonus is ankle-clonus, which is elicited by passively flexing the leg moderately on the thigh and then suddenly dorsiflexing the ankle by upward pressure on the sole of the foot. Rapid alternating extension and flexion of the ankle ensues due to rhythmic contractions of the soleus muscle as first pointed out by

S. Weir Mitchell. Sometimes a spurious or pseudo-ankle clonus is encountered in cases of hysteria, but the clonic movements are generally poorly sustained and irregular in rhythm and are never accompanied by an extensor toe reflex.

Knee-clonus or patellar clonus has the same significance as ankle-clonus and is elicited by making sudden traction downward on the patella, the knee being passively extended. Any of the deep jerks may become exaggerated into clonus; i. e., clonus of the jaw, elbow, wrist, fingers, knee, ankle, toes, etc. I remember a case of spinal lues in which the degenerative change in the pyramidal tracts was so great that a moderate tap on the patellar tendon would produce a clonus involving the entire lower extremity. Persistent clonus of any part always indicates a pathologic condition.

The biceps and triceps tendon reflexes are the two reflexes of the upper extremities most often investigated. The former is elicited by semiflexing the patient's elbow, supporting the forearm against the examiner's arm and striking the biceps tendon, which produces an upward movement of the forearm. By supporting the patient's arm just above the elbow with one palm, allowing the forearm and hand to hang perfectly limped, the triceps reflex can be obtained by striking the tendon which produces an extension movement of the forearm.

The supinator jerk is elicited by supporting the patient's hand in a semisupinated position with the elbow semiflexed, and tapping the styloid process of the radius, which causes contraction of the muscle with a resultant flexion of the elbow. Increase in the muscular tonicity of the upper extremities, and hence increased reflex action, is found in involvements of the corticospinal neuron at or above the cervical enlargement of the cord, viz., in monoplegia, hemiplegia, in amyotrophic lateral sclerosis, in which there is not complete degeneration of the motor cells in the anterior horns of the cord, etc. Loss of these jerks is usually symbolic of some change in the spinal arc proper, or in the peripheral nerve fibers.

CONCLUSION

The various reflex phenomena which I have endeavored to present for your consideration do not by any means encompass all the reflexes known for the examination of the nervous system, but are rather the ones which are of the most practical value. Aside from extensor toe phenomena, the absence or presence of a single reflex phenomenon does not necessarily warrant the making of a positive diagnosis of a nervous disorder, but rather in arriving at a definite conclusion, the entire clinical picture as manifested by the association of symptoms, physical and clinical findings, supplemented by a complete history should always be the determining factors. For instance, the diagnosis of tabes dorsalis should never be made on the absence of the knee-jerk, unless it is also accompanied by other cardinal symptoms as visceral crises, lightning pains, ataxia, Argyll Robertson pupil, vesical disturbances, etc. Indeed, it has been contended¹² that it is unwise to make a positive diagnosis of either

12. Fisher, E. D.: Jour. Am. Med. Assn., Dec. 30, 1911, p. 2134.

tabes or paresis unless the pupillary findings are positive of these disorders.

Unfortunately from a diagnostic standpoint, we have no constant changes in the reflexes accompanying mental disorders. General paralysis of the insane perhaps affords the most constant changes in reflex activity of any of the forms of insanity, but it must be remembered that in this disorder we are dealing with an organic affection since pathologic changes in nervous tissue can be demonstrated. The tendon reflexes are variable; they may be normal, plus or minus. The pupillary findings are more constant and characteristic. Early there may be disturbance of the consensual reflex; inequality and irregularity in outline of the irides is often present, and as previously mentioned, the change from time to time in the position of the irregularity denotes the oncoming loss of light reaction. However, the loss to light reaction is also found in tabes and in old syphilis of the central nervous system, which goes to show the necessity of having other clinical evidence besides a single reflex, no matter how pronounced that reflex may be, before making a positive diagnosis of a nervous disorder. As a general statement, I think it may be said that the deep reflexes are usually diminished in those mental disorders which are depressive in character, and increased in excitive and exalted mental states.

Finally, as a means of making a differential diagnosis between organic and the so-called functional disorders, the presence of an extensor toe reflex, of which type the Babinski phenomenon is classical, is conclusive in that such a finding always denotes an organic disease of the nervous system. Persistent ankle-clonus in association with a plus knee-jerk is also a good indication of an organic motor lesion.

WELL COBRA VENOM REACTION IN PARESIS AND OTHER PSYCHOSES *

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Cobra venom is a well-known and active hemolysin, and possesses strong and special hemolytic properties for human red cells. However, it has been shown that there is considerable variability in the resistance of the red cells from different individuals toward this action, and this has been found to be especially marked in certain diseases.

Noguchi¹ has shown that human red corpuscles, when treated with strong venom solutions, do not hemolyze; that hemolysis does rapidly occur in dilute solutions and that the nature of the reaction has been found to be analogous to the same process produced by normal or arti-

* Read in a Symposium on Mental Diseases, April 17, 1912, at Hotel La Salle, Chicago.

1. Noguchi: Osler's System of Medicine, i, 258.

ficial serum hemolysins; that is, there are amboceptors present which require certain complementary bodies to complete the process.

It is not my intention to enter into a detailed description of the causes of the different resistive actions of some human red cells toward this hemolytic action of venom solutions, nor to mention the various explanations advanced as to why this resistance is present to such a marked degree in some one or two diseased conditions.

Weil² found that normal individuals and various diseased conditions manifested this variability of resistance to a certain extent, but that this never approached that degree of resistance found in syphilitic conditions; and from his findings he was able to determine a positive and a negative reaction, and found that the cells in positive cases were derived chiefly from advanced syphilitics and almost entirely from those cases which had passed the primary stage of syphilis. Schwartz³ found that the Weil reaction seems to be specific for syphilis with the exception of carcinoma, that it is much more sensitive in old cases of syphilis and in the latent, untreated cases; that it persists much longer after treatment than the Wassermann reaction does, but that it is not as sensitive as the Wassermann reaction in syphilitic affections of the nervous system.

The fact that the technic of the Weil reaction is not nearly so complicated as that of the Wassermann test, that it seems to be more sensitive in latent cases of syphilis, even though not so sensitive in affections of the nervous system, induced me to apply this reaction to a number of parietic patients and to other insane patients with the view of determining just to what extent, if any, the reaction would prove useful in the recognition of the parasyphilitic conditions. The non-parietic cases used were taken from a large number of insane patients and were intended to be used largely for comparison with the cases of paresis. The technic used in making this test was that as described by Schwartz, and was followed in every detail. I shall not attempt to give a complete description of this technic here, as that can be found in the article by Dr. Schwartz, but wish to mention briefly a few of its principal points. A small amount of blood is collected from a vein into a test-tube containing 5 c.c. of a 2 per cent. solution sodium citrate in physiologic salt solution. This is allowed to stand in an ice-chest for about twenty-four hours. The cells are then washed four times with the salt solution and a 4 per cent. suspension of the corpuscles in this physiologic salt solution was made. As the cobra venom solutions tend to deteriorate on standing they must be made fresh. A small quantity of 0.05 per cent. solution in physiologic salt is made up from the dry venom and from this the higher dilutions of 1 to 10,000, 1 to 20,000, 1 to 30,000 and 1 to 40,000 are made. One c.c. of the corpuscle suspension is added to 1 c.c. each of the four solutions of venom, the test-tubes shaken and incubated at 37° C. for one hour; they are then shaken, placed in the ice-chest and allowed to remain over night, again thoroughly shaken after being taken out next day and the readings made one hour later. The cells which do not hemolyze in the 1 to 10,000

2. Weil: Jour. Infect. Dis., November, 1909.

3. Schwartz: New York Med. Jour., Jan. 6, 1912.

solution are considered strongly positive. Those which do not hemolyze or show incomplete hemolysis in 1 to 20,000 solution are positive. Complete hemolysis in 1 to 10,000 and 1 to 20,000 solution are considered negative, and on these results depends whether the reaction is positive or negative. As a rule the positive or negative result of this test is very definite and clear cut, and no difficulty is found in determining just which reaction is present.

The blood from sixty-four insane patients has been examined by this method. Thirty of these cases were typical paretics, presenting mental and physical symptoms, lymphocytosis and positive Noguchi butyric acid reaction in the cerebrospinal fluid. Of the paretic cases five, or 16.6 per cent., gave a positive reaction, the reaction in the other cases being negative, and in some cases strongly negative. Of the non-paretic cases eleven were dementia præcox, all being negative except one, which had a suspicious history of syphilis and gave a positive Wassermann in blood-serum. Two cases of arteriosclerotic dementia gave strongly positive reactions. History of syphilis could not be obtained in either case. Two cases of senile dementia, one having carcinoma of the breast and the other epithelioma of the nose, both gave negative reaction. Of the three cases of manic depressive insanity tested one was positive. The reason for this has not been investigated further as yet. One patient, an imbecile with definite history of syphilis seven years previous and positive Wassermann in blood-serum within the past year, gave negative result. Out of fifteen cases of epilepsy five gave positive reaction. Regarding the positive cases which occurred among the epileptics, as yet I have no explanation to offer for this. Definite history of syphilis could not be obtained in any of them. They were all patients who had been in institutions for a number of years and who suffered from epilepsy for from ten to thirty years.

The Wassermann reaction is found to be positive in blood-serum of paretics in a very high percentage of cases, Plaut⁴ and Boas 100 per cent., Nonne 90, Lederman 87, Noguchi⁵ 80 to 100, Henderson⁶ 97 per cent. of cases. The very low percentage of positive reactions by the Weil method I believe eliminates this reaction for practical use in parasymphilitic conditions, but tends to confirm the findings of Schwartz that the Weil test is not as sensitive as the Wassermann in syphilitic affections of the nervous system, and to a certain extent confirms the findings that the reactions are complementary to each other, one proving sensitive under conditions where the other fails. From the small number of examinations which I have made I have been impressed with the definite and clear-cut results presented in showing the differences between positive and negative cases.

I have no definite conclusions to state as to the processes by which this reaction occurs, not having studied or worked with the different elements used in performing it a sufficient length of time. An explanation, with reference to the change in the lecithin content of the red cells being responsible for the reaction, has appeared to me to be worthy of

4. Plaut: Nervous and Mental Diseases, Monograph No. 5.

5. Noguchi: Serum Diagnosis of Syphilis, 2d Ed.

6. Henderson: Review of Neurology and Psychiatry, March, 1912.

consideration in view of one fact which I found to be present. I found that on the addition of small amounts of paretic spinal fluid the hemolytic action of venom solutions is greatly increased. This is explained, I believe, by the fact that paretic spinal fluid contains protean lipoids in variable amounts and it has been shown that solutions of lecithin will greatly increase the hemolytic properties of venom solutions, the lecithin seeming to act as a complement.

The lecithin is an important constituent of red cells, and the hypothesis has been advanced, I believe by Wassermann, that the antibody of syphilis is a toxin which forms a toxolethacide with the lecithin of the blood, and since it has been shown that the red cells of syphilitics do show a specific resistance to venom solutions, this not occurring in other hemolytic agents, it would appear to indicate that the red cells in syphilitic cases have undergone a change, that this is a reactive phenomenon and in all probability is accompanied by a decrease in the lecithin content of the red cells, this being responsible for the increase of resistance of these cells and consequent diminution in the amount of hemolysis which occurs. In the parasymphilitic states, this loss of lecithin having been replaced in the red cells, they have returned to practically the normal condition and they react as in normal individuals.

In conclusion I beg to acknowledge my indebtedness to the Rockefeller Institute for Medical Research for the specimens of cobra venom used, and to Dr. Ralph T. Hinton, superintendent of the Elgin State Hospital, for permission to present this paper.

AMENTIA*

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The word amentia is used in this paper meaning *ab*, without, and *mens*, mind, without mind. It refers to a non-development of the mental faculties. Mentally deficient and feeble-minded are not scientific terms or ones especially applicable to the young of the human race. In a loose way they describe states of mentality that may overtake one at any time in life caused by illness, as injuries, old age, etc.

The 100 cases of amentia that form the basis of this paper are children whose mental defect existed from birth or from an early age due to incomplete neural development. The result of which is that they are out of relation to their families and unable to perform their duties as members of society in the position in life to which they are born.

The amented must always remain one of the great classes of mental diseases; whether or not this class is increasing, I am unable to say. We feel our responsibility toward them in a way we never have before. So much earnest and intelligent inquiry is being made that it cannot help

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but lessen the number of the amented in the future, and take from the white man's burden.

Psychiatry has been going through a formative period. We have had to rearrange the nomenclature and try different names onto various symptom-complexes. A great step is taken when a word is found to stand for a certain type of mental reaction and when we all understand the same thing by this word. We have not begun this for the children. The value of many reports is lost because we are not quite sure just what the mental status is of the ones they are recording.

In adult psychiatry we find that the classical picture of certain types of insanity is changing. The same thing is happening to different types of mentally deficient children. There is no question that high-grade aments or imbeciles get as far as the eighth grade or first year in high school. They get there by a trial and error process of adaption. Personally we know of none who have graduated from high school although in all probabilities some have.

No illnesses lead to such degrees of indigence as rapidly as mental ones. The poor have no choice but to expose their afflicted. Investigation into the causes that lead to it in this condition in life is comparatively easy.

Sometimes we hear that the rich have innumerable such children, but none of us seem to know quite where they are. They are so securely protected by the privacy that money buys.

If society has relegated to itself all the rights and privileges it longs to have it could hardly have chosen 100 men and 100 women more fitted to procreate their kind than the parents of the children under discussion. Their fathers are healthy, keen, intelligent and progressive men who stand well in various professions and many who are directing large business enterprises throughout the United States. The proof of their fitness for reproduction lies in their other children. In 5 per cent. only one conception took place, 90 per cent. have other children whose progress in various schools and colleges is uneventful. No case is recorded that has been under observation for less time than one year; the longest time is eleven years. It is the purpose of this paper to only touch on some of the high places.

Even though we find a given heredity that may be responsible for this one child who is so out of relation to his family, other causes must have entered into it. Heredity stands for the predisposing cause—it is the something that affected the germ-plasm before conception took place, but it is not a constant factor, for healthy children were born both earlier and later. The exciting cause is the environment, whether it be intra-uterine or extra-uterine. We may not be able to change the heredity, but we are responsible for the environment, and we can better its condition. There is more than one cause for every mentally deficient child.

Nature has a strong leaning toward the normal; she will make a brave attempt at doing her best, and can many times adjust herself to a lowered vitality, to rapid child-bearing, anemia, etc. In the face of a

toxemia she is powerless; it may last for only relatively a short time during her pregnancy, and leave a blighted nervous system behind.

The common history is that the mother was not as well during the pregnancy, she felt a marked intolerance for it in contradistinction to her others. When the baby came she had no nourishment. Finding the right food proved a difficult task, and many times a year passed with little gain in weight; there is almost always a disturbance of sleep. If the child is so unfortunate during its first few years as to have an infectious disease, added to the mental reduction will be disorder of attention. Out of these 100 cases from the seventh year on only 5 per cent. show any anthropometric variation. They are as healthy, well-grown and well-proportioned as other children. Good food and good care have enabled all except the nervous system to attain the normal. The prevention of a large class of amentia lies in the health of the pregnant woman.

IDIOTS SAVANTS

I stand in distant admiration of the far-off psychiatrist who first said idiots savants. The conception of this group must have been all feeble-minded persons who had some special gift or aptitude way out of proportion to the rest of their mind. There is much more reason for including this early group in dementia præcox than the late cases occurring about the thirtieth or fortieth year in more highly organized nervous systems. These special gifts or aptitudes spring into consciousness spontaneously sometimes as early as the third or fourth year. This class included some of the great arithmetical and musical prodigies. They have special memories usually of the auditory type, although they may be auditory-visual. I have known none whose kinesthetic images played any part in it.

One young woman who is unable to dress or undress herself, or in any way care for her person, can remember the weights of some seventy-five to 100 children from month to month by hearing them called off once. Others know the dates of each one's birth they come in contact with, and can remember every telephone number they have ever heard.

A patient at the age of 25 who was apparently born with a good and well-rounded vocabulary and who learned to read as early as her fifth year can recite pages of books and poetry. She gets it in a photographic way, and reproduces it as an exact image. She is quite unable to transpose it or take any short cuts and arrive at its meaning; her images are auditory-visual. This magnificent gift of the mind stands alone and unsupported. If it could be correlated and associated with other mental functions it might help to further the organism in its environment. I have never known such a fortunate result. It stands alone and isolated in such striking contrast to its host. Her visual images are so faulty that she has never seen her clothing in its right relation to her body. She has never known the front from the back of her hat. Her responses to the entire series of the Binet-Simon intelligence test are 90 per cent. correct. The ones she failed on are in getting the value of stamps, making change and reproducing drawings other than the square.

I do not know whether you can say that the amented become demented or not, but if these learned aments live into the twenties and thirties they often lose their remarkable gift. To one who is directing their lives there is a marked similarity between them and the early cases of dementia præcox. The idiot savant is always the child; even though he passes puberty he is never the adolescent. They go from children into the aged. The dementia præcox group have stepped out of the content of childhood, and react only to the stimuli of adolescents. These learned aments have catatonic excitements and catatonic stupors, the mannerisms of catatonia and its negation. If they have hallucinations they remain only fragmentary.

Physicians say, as well as educators, that if a child can do certain things he can be taught others. I only wish this were true. Among the mentally deficient children that I know perhaps only two are typical, in that their mental life and instincts are lowered in all directions. Back some place in the history of the world where life was not so complex and the choice reactions limited they might have gotten on, although even then there were sterling qualities that stood for the survival of the fittest. In directing their education and training there always are upshoots. Physiologically or pathologically there must be certain groups of neurons out of proportion to the rest of the cortex.

PREDEMENTIA PRÆCOX

Articles are beginning to appear on predementia præcox. So far they have been only vague, feeling about for a type of child that may be a candidate for this psychosis. The hope is that in guiding him safely over the rock of puberty his nervous system will be strengthened and fortified against the future. If we are able to pick him out from the normal and so educate and care for him that we can prevent the oncoming dementia a great step will have been taken.

My experience with this class is only limited. Whether their mentality was above or below the normal threshold they were children whose social relations were defective. If added to this they use their hands poorly, there is every reason to apprehend danger.

These defective social reactions may stand for the "conflict of instincts," the faulty habits of adjustment. They may begin in a child's life almost as soon as he can walk and talk.

MONGOLIANS

Of the eleven mongolians in this series, six have had a neuropathic inheritance; two an alcoholic one. The striking resemblance which they bear to each other points strongly to a common cause. Nine have had normal brothers and sisters; so that, with this given inheritance, other causes have been active. Seven were late pregnancies, occurring from twelve to twenty years after the birth of the previous child. The cessation of menstruation is taken for the menopause, the mother not knowing she is pregnant until she feels life. One wonders why these belated children are not stillborn; the nervous system is in such an unfinished con-

dition. Further research will probably reveal the fact that many of them fail in coming to an extra-uterine existence. The relatively smooth cortex makes them one of the most interesting and distinctive syndromes of mental diseases.

It was not until the appearance of Dr. Fredgold's book that I knew that a mongolian could have a smooth tongue. He states that the characteristic tongue sometimes does not appear until after the sixth year. This leaves no physical finding that is pathognomonic.

I have in my care a mongolian of 29 whose tongue is smooth and has always been so.

If mentally deficient children were ever worshiped as gods, they must have been the mongolians. The absence of so many secondary convolutions makes them one of the most fruitful types for research work. One is amazed at what they can do with such a shrinkage in the number of convolutions. Some of this group have learned to read and write with no more difficulty than normal children. There is no logical reason at all for their being able to do this. Their placidity is a striking characteristic. They never hear anything the least derogatory to themselves although their hearing becomes acute when it is anything that pleases them. It is difficult for consciousness to eliminate or to trust anything to the lower centers. It may be the other way round — that the lower centers have no confidence in consciousness. It will be most illuminating if further research discloses the fact that any are self-directing.

To an educated man or woman nothing can be quite so difficult to face as having a child whose mentality is reduced. The lasting sorrow is that he may live on in this world after death has taken their protection from him. They are eager to help him and have gone from physicians to educators in a most appealing way. We have had little that has been trustworthy to offer, nor is it at all safe to formulate what the results of his training and education will be until he has been under competent observation. Perhaps it is better to get at this from the negative side and to compare it with other fields in psychiatry. We can no longer say of a child who does not use his hands well or talk by the fourth or fifth year that nothing can be done for him or that he will come out all right. Such vague statements as that he will never be a lawyer or a doctor are grossly misleading. And also to say that a child of 16, for instance, appears like one of 10, extends the hope that if time is sufficient he may overtake the normal. The content of the mind of a mentally deficient child is never comparable to that of a normal one. It is not going to detract from any one's greatness to say he does not know what the result of training and education will be. It is not even safe to put him into either of the two great classes, educable or custodial, until after he has been given a trial.

We have learned the importance of the early recognition and treatment of mental diseases. The greatest percentage of recoveries take place in this early state. Amentia is one of the great and incurable diseases of the mind. It does not always mean a lowered mentality, but an uneven development. The predisposition to insanity is given as

twenty-six times greater than that among normal children. We might be able to protect them from this and other equally unfortunate complications if we could get about it in time. They should never be subjected to the storm and stress of life. It is hard for parents to accept his lowered mental and social standing and yet it is better to urge this on them than to see the doors of an asylum or penal institution close on him later.

We hear much of the border-land class. I have thought many times that I have seen him in my office, but if we have had the privilege of having this same border-land child under observation, to trace down how he learns and what his rate of progress is, he takes his stand on one side or the other of this not hypothetical but real and tangible line. In the neighborhood in which I live I know some dull and stupid children, but it would never occur to any one to encroach on their liberty. The amented may be much brighter in some special directions but they can never manage their affairs or direct their lives. Some physicians say and so do some educators, that a child is only slightly abnormal or slightly backward, and their advice is to keep him with normal children. I have never known a good result to follow, but it is possible that I only see the failures.

We cannot get away from the fact that we are dealing with organic diseases of the brain. What would we think of a physician who said that one was only slightly cancerous or slightly tuberculous? And if all he has to offer was keeping him with the normal?

We frequently hear of a child who has a palsied arm or leg, being made in so far as he can, to step along with normal children. This is done before the brain has attained its growth and development when we know that every incoming stimulus is blocked and that it must go round by some other neural pathway. We are dealing with an organic disease of the brain and one that we have every reason to believe is progressing. Children are so brave and courageous; they are so glad to do the best they can.

We have all learned the value and need of a good breathing space. The patients that I have had their adenoids and tonsils removed. Much attention has been called to this. A great part of the improvement that follows is due to the fact that the child can keep his mouth closed. When he was obliged to keep it open in order to get air he lost the kinesiastic movements that take place in the lips, tongue and hard palate. This must have been a tremendous waste in his thinking. The improvement in his mentality is due largely to the gaining of these motor images. I know of more than one child whose parents are waiting for him to become normal because some specialist has told them that he would be all right after his adenoids had been taken out. Unfortunately the specialist was unable to make the mental diagnosis.

The last thing to have been made biologically is a motor neuron. We find it the first thing to go. Sensory neurons are not so perishable; they are more definite and fixed. We have not been attacking them in an educational way as we have the motor side. I am not at all sure that

this is right. We lay hold of his hands, and feel that we must make him use them in order that he may assume the care of his person. We are becoming convinced that more can be done with the sensory side than has been attempted.

Among the normal children that I know, visual and kinesthetic images predominate. Among the amented that I know, auditory images are away out of proportion to their kinesthetic ones. The type of imagery in children cannot always be determined until you have had the privilege of working with them. The proportion in which auditory images dominate consciousness and in how far the motor ones can be made to offset this is a point of great diagnostic and prognostic value. One who is a highly visualized thinker and who gets a pure auditory image only once or twice a year and then in the predormition can understand how impelling and insisting this type of mental reaction is. It isolates the patient from his environment, shuts him out, and is always of grave significance.

A certain lopping off of useless movements must take place in a child before motor images can be of much use to him. The flow of consciousness may be contracted, the child responding to only a few stimuli. The failure of these useless movements to be lopped off is responsible for the prolongation of the trial and error process of adaptation and it is why he does not get on. As I apprehend the problem of special education its great value is in tracing down why the child cannot learn. Primarily this is a medical and medicopsychologic problem — one in which education is an adjuvant in the practice of medicine.

It has been said that if a child has a well-developed sense of rhythm something may be done with it; we have never been able to. To the writer this does not stand for a conscious process. It must have originated away back in intra-uterine life when the first auditory impressions came from the maternal heart-beat and the aortic bruit. It is nearer to the automatic and reflex acts than it is to the consciousness. In our experience a well-developed sense of rhythm has even stood in a patient's way.

Physicians have looked on this problem as so hopeless. It is stated that the high tension at which we live is partly responsible for these children who must live isolated from their families. To offset this, we are more intelligent than we have ever been in regard to the other causative factors, the prevention of tuberculosis, Dr. Flexner's serum for cerebrospinal meningitis, the early operative interference for injuries at birth and certain cerebral palsies, the knowledge of the toxemias of pregnancy in connection with the hyperactivity of the thyroid gland and the toxemias due to insufficient renal and intestinal elimination. I have purposely left out alcoholism and syphilis — they have played so little part in the cases recorded.

The intensive work that has been done in attempting to educate the amented has resulted in many of them being overeducated. In hewing out neural pathways it is expedient that the emphasis be put on the things that are of vital importance. The object is to train them to live.

In order to assimilate the foreign-born child we may have to lower our educational and industrial standards to include him. Even though

he stands for unskilled labor he does not need institutional care. He is not strikingly out of relation with the family from which he comes. We are only now learning the folly of attempting to educate the truly amented in any part of the public school system.

Fully realizing the controversy that this may bring down on me, I firmly believe that 90 per cent. of the amented are sterile. The danger that is apprehended from their reproduction is overestimated.

THE BINET-SIMON INTELLIGENCE TESTS IN THEIR APPLICATION TO DEFECTIVES *

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Among the social conditions causing concern at the present day, perhaps none is more menacing to the future of our civilization than the presence among us of over 300,000 feeble-minded individuals, unless it be the further fact that studies in heredity are pressing on us, that this number is increasing and will continue to increase just as long as feeble-minded individuals are allowed to propagate their kind. That they are so doing at present is indicated by institution records which show that a large proportion of institution charges come from feeble-minded mothers or fathers or both.

Institution charges are, however, a small proportion of the 300,000; they number at the outside not more than 25,000. The problem of the feeble-minded is not at present so much an institution problem as a general social one. Of these people 175,000 are at large, freely contributing to the criminal and pauper classes and presenting families of feeble-minded little ones to the community to be cared for.

Segregation in colonies or in institutions is a remedy that should appeal to the humanitarian, the economist and the advocate of eugenics. It protects the feeble-minded who are helpless in the hands of the evilly disposed, removes the feeble-minded criminal class from the community and prevents the increase of feeble-mindedness.

The demand for segregation from these three viewpoints is daily forcing itself on the public view, and it opens up a new problem, that of the method by which feeble-minded children could be singled out early enough in life to save them both from evil and the commission of evil.

Just at this opportune moment, psychology, which has for years been making a study of the atypical child, has perfected a reliable and practical diagnostic method by which such children can be identified. The psychologist trained in the clinical application of the science, can without the aid of his laboratory, in any school building which offers a quiet room, examine the children and determine their mental status. If school systems would take the precaution of having all children who show any sign

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of retardation examined by a competent psychologist at not later than the age of 10, the problem of identification would be solved.

This diagnostic measure which it is my privilege to present for your consideration is the Binet-Simon measuring scale for the intelligence, popularly known as the Binet tests. The popularity of this Binet method is by no means paralleled by accurate knowledge concerning it; its history, its claim to scientific value, its content and its aim are all quite vague in the public mind. As its value is certainly unique and judged by many to be very great, I take this opportunity of trying to substitute a just appreciation for a vague misunderstanding.

That this latest contribution to the study of the feeble-minded child should come from France is altogether fitting. It was a Frenchman, Itard, who first recognized, at the opening of the nineteenth century, the psychologic problem of the feeble-minded child, and France has been in the vanguard of the work with mental defectives ever since. The tendency of French psychology is to treat all mental phenomena from the genetic, the developmental standpoint. The Binet scale is the direct result of the application of this method to the study of the child mind. It is not a series of tests made out in the laboratory with a view to isolating and studying certain mental processes—it is a hierarchy of tests evolved during years of observation and study of children. For years it was Binet's effort to trace the gradual development of the mental processes of children and also to gain a knowledge of their diversity. During this experience experiments were made on many children (isolated cases), numerous tests were tried, many were discarded, and those that finally survived did so only by virtue of their intrinsic value thus proved by actual trial.

The result of all this careful and prolonged experimentation was a series of tests arranged in the order of increasing difficulty. The simplest of all could be passed by children of 1 and 2 years, another group suited the 3-year-olds, another the 4, and so on up to the 12th year. The absolutely original phase of this series is innate in the method by which it was evolved; the original phase is the correlation of age with different mental abilities. No psychologic viewpoint but the developmental one would be likely to produce such a series, and the developmental one could scarcely avoid producing it.

The usual method in America is to work out norms of efficiency for certain tests and to compare an individual performance with these norms. Applied to adults this is doubtless the best method. Its weakness when applied to children whose powers are not yet fully developed, lies in the danger of interpreting a low efficiency mark as an indication of mental deficiency when in reality the mental ability under observation is normally undeveloped at the age of the child being tested. Binet cites rather an extreme case—a child of 7 was pronounced an imbecile on the evidence of being unable to read and write. This is unquestionably foolish, as many normal children of 7 can neither read nor write. The correlation of age with test rules out entirely all such errors, for the

scale states exactly the normal stage of development of each power at the various ages.

In 1904 there was an educational movement in Paris which required that the feeble-minded children in the schools should be selected by means of examination. There was at that time no exact method for such examinations, and with the purpose of supplying such, Binet tried out his system on groups of public school children. He first examined children who were average pedagogically, using fifteen of each age from 7 to 12, and ten of each age from 3 to 7. The hierarchy of tests was finally arranged in age groups according to the results of these tests and those taken earlier, and a means of accurate estimation and exact statement of the level of intelligence of an individual was introduced. The series was now standardized, it remained to adapt it to the diagnosis of the feeble-minded.

The classification of mental defectives accepted most generally is a tripartite one into idiot, imbecile and moron. The dividing lines between these grades are, however, not accurately determined. Differences in the ability to care for the person, eat, dress and work roughly mark them in most cases and the personal equation necessarily enters into all diagnoses. Binet was of the opinion that uniformity of grading should be secured. He also thought that the classification should rest on mental symptoms rather than physical, anatomic or pathologic ones, for the reason that such mental symptoms constitute the essential, the indispensable character of the feeble-minded condition. Epilepsy may exist without feeble-mindedness, so may hydrocephalus, paralysis and other physical conditions which form the basis of some classifications. Such classifications, moreover, group together cases of widely differing mentality and are therefore less practical from the point of view of planning occupations and training.

With these ideals of diagnosis he tried out his hierarchy of age-grouped tests on the patients at the Salpêtrière. Binet was a student of language development — his judgment was that in intellectual development language is so deeply involved that it may be taken as one of the criteria of the intellectual plane. He therefore used three great stages of language development to differentiate between idiocy and imbecility and imbecility and moronity. The idiots in his classification are those who do not reach the level of spoken language; they may use and understand gestures and even understand a word or two; but further than that they never go. The imbeciles not only understand language, but talk also in varying degrees of fluency, and the morons are capable in addition of learning to read and write.

Applying this idea to the scale the idiot is limited to the age groups one and two, the imbecile to those between three and seven (inclusive) and the moron to those between eight and twelve. The try-out on the children at the Salpêtrière proved that the hierarchy was still a hierarchy with the feeble-minded. It also proved a very satisfactory method of grading — a definite idea of the degree of mentality was given by each diagnosis and if the method was universally adopted the problem of uniformity would be solved.

Since 1905 Binet and Simon have from time to time published results of further work. Other experimenters have also adopted the method and contributed results, and last year as a product of all this later work Binet published his final somewhat modified form of the scale.

So much for the history of the development of the scale which is also one of its claims to confidence. Other claims will be pointed out later.

The scale consists of a number of groups of tests; each group is assigned to a certain age and consists (with a single exception) of five tests, which the average child of this age is capable of passing. The mental abilities tested are numerous and varied, the aim being to test each ability as it arises and again as it reaches higher and higher levels of development. The immediate memory for numbers, for instance, is tested and the results recorded in the 3, 4, 8 and 15 year groups, which call for the repetition of 2, 3, 5 and 7 digits, respectively. The scale tests the development of language, of abstract ideas, of memory, of association, of reason, of imagination, of the idea of numbers; also suggestibility, the ability to attend to and cope with moderately complicated acts, the sense of form, of time, of size, of weight, the coordination of finger movements in writing, and in simple drawing. It thus ranges over nearly the whole realm of the mental processes and then finally by a nice correlation gives us an estimate of the child as a whole, not as a bundle of abilities.

When I say the child as a whole I speak of him as an individual meeting the requirements of every-day life. If a child of 10 is graded as having a mentality of 7, school methods used with children of 10 would be futile with him—the mental appeal must be couched more simply, it must drop to the level of a 7-year child. The intelligence tested, says Binet, depends on intelligence pure and simple, acquired knowledge and vocabulary. An analysis of the tests groups them under these headings. It is a complex thing, this intelligence that is tested, and the fact that this complexity is finally expressed in a single number indicating developmental level is a triumph of skill.

Although the materials used in making these tests consist only of a little money, a few pictures and blocks, and although the tests are in essence very simple, Binet insists again and again in each succeeding article on the subject that the scale is not a mechanical one to be applied unscientifically. He reminds his readers that the most accurate scientific instruments are useless in the hands of those not trained to use them, and states most emphatically that as a diagnostic method his scale is useless unless applied by one versed in psychologic theory and experimental methods. "The results of our examinations," he writes, "are of no value if they are separated from all commentary, an interpretation is necessary."

A child is graded at the mental age for which he passes all the tests. As, however, the ability of children does not always develop evenly, another year of mental age is added for each five tests passed in groups of later mental age. Having determined the mental age of a child, to estimate his normality it is necessary to know his real age. Though the great average of normal children pass the tests at age many are a year either advanced or retarded and a few two years. Binet considers no

child deficient unless it is at least three years retarded. If it is three years retarded it is placed in the feeble-minded group, the subgroup being accurately determined by its mental age. Thus a child of 8 years who has the intellectual development of 6, is considered simply a backward child, while a child of 10 who has the intellectual development of 6 is ranked as imbecile.

The claim that this series of tests is in reality a true hierarchy has been verified by two distinct treatments of the results. One method consists in correlating the mental and actual ages of large groups of normal children, and plotting a distribution curve therefrom. If the great majority of children show a mental age equal to their years and the remainder are evenly divided above and below, the results follow the normal distribution curve, and indicate that the series is a just one. Binet published such results for a group of 203 children which are shown in the accompanying curve (Fig. 1).

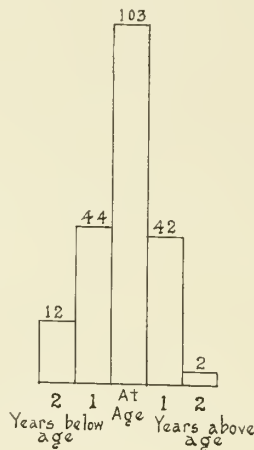


Figure 1.

Dr. Goddard of the Training School for Feeble-Minded Boys and Girls at Vineland, N. J., published such a curve for 1,547 public school children. His results are shown in the accompanying curve (Fig. 2).

The other verification is attained as follows: A child's mental age is at first fixed by the highest group of tests, all of which he passes. If the series did not form a hierarchy it would frequently happen that a child would pass successfully the tests let us say for 7 years, and yet fail in some assigned to the level of 6 or 5 years. Binet reports that in seventy records no such instance occurs.

The records of the feeble-minded are open to this second form of treatment. Binet assumes that the intelligence of the feeble-minded is arrested at varying stages of normal development. If such is the fact the records of the feeble-minded children should stand such a test as outlined above. I have examined the records of 200 feeble-minded children at the Lincoln State School and Colony and find that all but seventeen, less than 9 per cent., stand the test. Of these seventeen, twelve fail in but one test below

their mental age, the other five in two. The copying of the diamond figure presents great difficulties for the feeble-minded child, and ten of these failures are on that test. Two failed in definitions, four in immediate memory for sentences, and two in discrimination of weights.

This result, I think, not only adds another bit of evidence in favor of the scientific validity of the hierarchy, but is also confirmatory of the wisdom of Binet in applying his system to the classification of the feeble-minded.

The threefold aim of the scale to furnish a means of determining the intellectual level of any child, a means of determining the normality of any child, and a means of determining the grade of mental deficiency, has, I think results show, been attained.

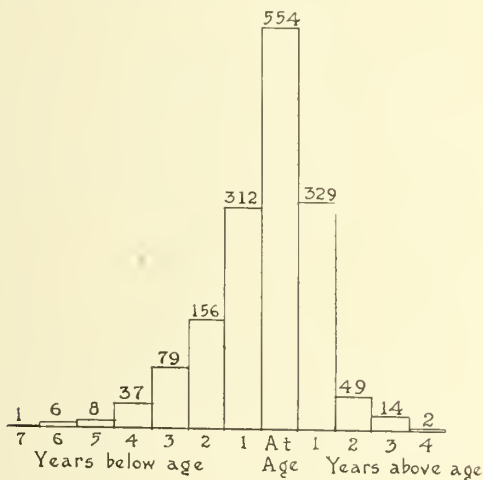


Figure 2.

DISCUSSION ON THE PAPERS OF DRs. POGUE AND TOWN

Miss Clara Schmitt: I cannot dispute the figures which Dr. Town has given us of results of application of the Binet scale. I disagree with Dr. Town, however, in this respect: that the tests are not of so very great practical use. I have had some experience in the use of the Binet scale, along with other tests, in the clinic at the juvenile court.

We have, coming into the court, a great many high-grade feeble-minded. If we take pictures of the mind according to the Binet scale many will look alike, that are not alike at all and one will have to find out a great deal more about the patients than the Binet scale permits of to know what course to pursue.

I might give many examples of the cases coming into the court where the Binet tests are not at all adequate to explain the conditions presented. One case that I recall just now is that of a boy of 16 years (and he is one of a class) who has been in school since the age of six and has never learned to read or write. He can write his own name, but when told to write "the cat" he writes "the set." On the printed page he calls "the" "its" and knows, perhaps, six or eight words.

According to the Binet scale he would grade up to the age of nine years. We have a good many others coming in who would grade up (by test) to nine years also and one would think they and this boy alike, but they are not at all.

Another type which grades 9 years mentally and which like this boy illustrates a class, has an entirely different sort of mental ability. Dr. Pogue has just men-

tioned that our abilities are not along a level. We have different abilities developed in varying degrees.

This particular boy that I have mentioned has a good deal of ability with ordinary manual labor. He has been earning his own living on a farm for years. He may be trusted to drive the wagon to the dairy with the milk cans and he can plan certain simple mechanical contrivances with his hands with considerable skill.

Some of the other cases that I have seen and that cannot read or write (and this is another thing the Binet scale will not show) cannot be trusted with any mechanical work.

I might give many examples of children who have other abilities, in addition to reading and writing, and yet in the Binet tests would not grade above nine years.

My chief objection to the Binet scale for the high-grade cases is that it does not aid us at all in determining what to do with them.

Dr. Albert E. Sterne (Indianapolis): I should like to ask how far, after the educational method has been pursued with these children, surveillance is maintained over them. When is the age achieved at which you feel that these defectives are capable of taking their places in society and permitted to do the very thing that we are striving against; namely, to further increase the proportion of mentally disabled and physically inefficient.

It is of most vital consequence in the solution of the economic problem that some means be had, if we reach the aim we are seeking (that of developing a race of self-reliant, mentally capable, persons) that a restraining hand be held over these long after the period of time at which the state institutions permit them to pass out. That, again, is noticeable in Indiana and an age limit is given in which an attempt, even, is made to educate them.

The thought is, Dr. Town, which I have tried to carry out in my work as much as one may in private practice, that one must seek to educate these children, to find out what they are capable of, and to hold them under surveillance. Cases that come to my observation from the juvenile court always appear to point very strongly to the fact that there is too little authority held over the patient. In other words, we are trying to accomplish something which in the end does not amount to much so that one comes to the rather cynical conclusion that we are attempting to force these unfortunates up to a standard they cannot keep. We see so much, and we hear so much, of "the unfit."

The truth of the matter is that human beings are brought into the world with less thought than ordinary cattle. There is not much use in attempting to achieve any such results as we contemplate in this or in any other country until we begin at the other end of the problem. Instead of attempting to fit those who are here for the struggle before them, we should attempt to see that there are no more of that kind to deal with. When that is done we shall have made strides indeed. Understand that I do not deery education of backward and incompetent children, nor underrate the value of the Binet tests for the purposes to which they are adapted, but my opinion is that the ultimate end is not sufficiently good to modify much the essential problem, nor help very considerably in its final solution.

Dr. James G. Kiernan: It seems to me one point has been omitted in the discussion which is brought out very well in the paper. That is, in medicine we are dealing more with individual patients and less with routine, shot-gun ways of handling every case alike. I do not think that phase of the subject has been fully justified in this discussion.

At the same time it does not seem to me that these cases were classes of patients. Granted that we have these types. We have also another type and a type which yields more to training. That is the retarded type.

The retardation is a temporary condition, often due to surroundings, which can be corrected.

The main thing, it seems to me, is to deal with it from the standpoint of suggestion. Elementally you can deal with a baby by asking, in a pitiful,

plaintive tone of voice some simple question which, repeated, will make the baby cry. What is true of the baby, is also true of these.

In the point of heredity: that brings us back, of course, to the pith of the whole matter. But we too often forget that the great danger is not the fathers, but with the mothers. In New York they are realizing this and are attempting to deal with it by perpetual custodianship of the mothers. Here they wander out into the poor houses, into the resorts, into the Bridewell and they have an almost limitless progeny. Fortunately, the most of these die before the fifth year. It seems to me, however, that from this standpoint the subject should receive the most thoughtful consideration.

Another question is that of environment. We forget that environment, at a certain intrauterine period, will arrest certain potentialities. We forget that birth will arrest certain other potentialities. We forget that at the end of the sixth year they may break down. We forget that again between the ages of sixteen and twenty-five there may be a breaking down from a number of contributing conditions. All these conditions may be arrested by proper environment at these times.

Then as to the question of languages. I often wonder if the potentiality for acquiring languages is not over-rated. I remember an instance. I remember one very interesting case who learned not only the use of certain words, but the application of certain words for certain particulars and I do not believe that even in this he was much higher in intellect than a dog. At the same time he used to be put on exhibit at lectures and not always in a very kindly way and he had the habit, when he tired of a certain part of the performance of saying, with his hand on his abdomen, "me sick here" and running out.

We must remember that from the feeble-minded to the lunatic there runs a close connecting link. There are certain potentialities lingering in certain of all of these types which can be developed.

I cannot agree with the essayist about epilepsy existing without other mental conditions. No epileptic ever remembers his convulsions. That means total mental unconsciousness and we cannot see there total mental development. Kerlin and others were of the opinion (which has since been corroborated by observations) that development in the idiot and imbecile was followed by retardation or arrest of the secondary ego.

Dr. H. N. Moyer: In 1911 I went to Vineland to see Dr. Godding and he showed me how he used these tests. In fact, he tried, in the brief time I was there, to teach me how to use them. I was deeply interested and as soon as I came back I tried the tests on a few cases, meeting with surprisingly accurate results.

I doubt very much if the Binet-Simon scale is a thing to be worshiped as absolute. It is a clinical aid, and a mighty good one. It is rapid and it is approximately accurate. The older methods were not so rapid and were far less accurate. That in the high-grade moron they are not as accurate as in the low-grade cases is, probably, true. The problem in examining these children of five and six years is practically solved by the Binet-Simon scale. It gives something to work from and a solid foundation. You must remember that there is a three-year limit allowed and inside of this your diagnosis can be made quickly and accurately, enabling you to begin in the early years the necessary training. This table of the tests of the school children in New Jersey shows surprising results. These tests were made accurately and quickly, revealing a surprising number of feeble-minded children, among those who were thought to be only retarded.

Dr. Oscar A. King: I know very little about feeble-minded children. Of course things in medicine apply in one direction that apply in another. The French are masters in all the sciences and there is scarcely a branch in which some Frenchman has not presented the most scientific method of presenting findings exactly. It is altogether fitting, therefore, that a Frenchman should have given to us the most exact and simplest diagnosis of these puzzling conditions.

Of course it would be unreasonable to suppose that any method could be devised which would diagnose to the minutest detail all of these cases. Think of

the varieties in which they present. Think, even, of normal people—a thousand men, no two alike. A thousand boys, no two with the same capabilities, or the same possibilities. And that children under 12 years of age should be all (or the majority) alike is out of the question. With this scale, however, and with its allowance of two years variation, we see little difference in them, so that they may be all grouped according to years.

There is, then, that other great matter, of the influence of heredity on feeble-mindedness and the increasing number of feeble-minded and idiot children and those below the average, while not exactly imbecile. In the same way that this test is applied to normal children, for the purpose of classing them, it may be applied to these. We see many forms of disordered intellect and particularly where heredity and mental disease of old age play their part. I feel that all of us, more or less, are flying in the face of Providence, in that splendid rule applied in nature "the survival of the fittest." Just now all classes of people are engaged in promoting the survival of the unfit-est. We are seeking in every way to promote the interests of the unfit. Our insane, even, are increasing since we have better facilities for their care. Because of this they do not perish, as the unfit do in nature. They survive and recover, are sent back to their families, bring forth more children. A number of young people who have never been married return to society, are married and reproduce and I imagine that the feeble-minded for whom so much is being done do the same thing when they have reached the age limit set by the schools to which they are sent. The same thing obtains in criminals. Six weeks ago the Governor of Arizona invited a sufficient number of convicts out of the penitentiary to engage in a baseball game so that the citizens of the penitentiary might have a good time.

In all directions the dividing lines are being wiped out and all kinds of clubs and social settlement work and all that sort of thing is being promoted, so that the chief thing seems to be to promote the interests of the unfit, to create a society for them, so that they may marry and reproduce their kind.

Actually to accomplish anything in the way of diminishing the number of defectives and increase the number and quality of the effectives we shall have to begin the other way about, or soon we shall all become defectives. There is no question at all but what every law being enacted in the legislatures tends in the same direction.

Dr. A. M. Corwin: I really think a laryngologist has no standing in a meeting of this sort, but when he comes, as I have, to sit at the feet of learning, I trust I may be permitted the privilege of the meeting.

We are peculiarly interested in some phases of this question and, I take it, if I am properly informed, that these tests, which have been so varyingly put before us by the last speakers, are applied only after the errors of the special senses have been corrected and the upper air passages have been cleaned out thoroughly.

I should like to ask whether Dr. Town has had any definite information with regard to these tests before the correction of reflex disturbances produced by adenoids, tonsils, etc. We know, of course, that these will cause mental symptoms of the most grievous sort, but I should like to know whether she had had any scientific observation of this phase of the matter.

I wished especially to speak of this because the reader of the first paper (Dr. Pogue) in my estimation, properly accentuated the value of conservatism in the prognosis of the outcome of adenoid and tonsil operations.

You know a dozen years ago we laryngologists were apt to take a very rosy view of this and say "the outcome will be thus and so," expecting children who had developed not the slightest spark of intelligence before to suddenly blossom out because the adenoids had been removed. We are, however, getting more conservative because we are brought more and more in touch with the fact that the outcome is not always perfect although the operation has been done ever so well. I am not slow to throw out an anchor to the windward, warning the parents of the patient that, although so far as I can observe the patient should improve markedly, still it would be well to keep them under observation for a time, refer-

ring them to the proper authorities for training if I find them still backward in spite of these reform processes.

Dr. C. J. Lewis: One point in the first paper which I should like to reemphasize is the matter of heredity. Our social and business life is so busy that it is not to be wondered at that the mind of the coming generation, which is compelled to toil, the women of which are compelled to work beyond their strength, has not an efficient central nervous system, as well as sufficient vitality. In view of this, and in view of the tension under which we live we have ample reason to observe why we have so many below the average.

H. C. Keough: You will pardon me if I call to your mind an old saying of Dr. Sumner. Speaking of the survival of the fittest he used to remark "Remember that 'the survival of the fittest' means merely the survival of those fit to survive in a given environment."

Dr. Frank P. Norbury (Springfield): Inasmuch as the name of Dr. Kerlin was mentioned in this discussion by Dr. Kiernan, I will say that the test of Dr. Kerlin (I happened to be a student and an intern under him) and men of his time was comparative, largely; they knew something of the difficulties of studying the feeble-minded as we do to-day, but not measured with the precision or the means as effective as we now have. The advancement as Dr. Town has stated, not only psychologically but biologically, has its scientific foundation in the facts revealed in the Binet test.

While it is true this does not cover all the requirements in each individual, it does meet the essential requirements in establishing a diagnosis and that is what is claimed for it. It is not only an aid in dealing with the feeble-minded but, as you have seen, in grading an ordinary school.

It seems to me, as Dr. Town has emphasized, we must take cognizance of the fact that if we are to do anything for the feeble-minded and retarded children we must take them early. New Jersey has taken the lead in attempting to provide special, ungraded schools for these classes. St. Louis was the first city to establish a school for the retarded child. The ungraded school meets this condition wherever it exists. This city of Chicago maintains a similar system of ungraded schools. One by one, all cities are recognizing this duty and providing such schools. A true advancement directly traceable to educational psychology.

What I wish, however, to emphasize is the advantage gained to those upon whom falls the responsibility of diagnosis of these conditions. I well remember, as an intern, how I used to have to struggle along with these cases to gain even a provisional diagnosis, which now with the Binet test can be shown in an authentic and dependable form in a short time.

The subject of heredity is being fostered in America by the Eugenics Section of the American Breeders Association and under the stimulation of such reliable authority great good will come. I hope we shall soon have in Illinois trained observers to help Dr. Town in her work in studying the fundamental conditions underlying these cases. New Jersey has, I believe, eight or ten trained observers gathering data which is of the utmost value in showing the causes, physical, social, etc., that have made the individual a patient. Those of you interested in this subject should write to the American Breeders' Association for their literature. I am sure, if you are not in touch with it, you will be surprised at the practical work being done; work that is worth while, constructive and beneficent.

Dr. Albert E. Sterne (Indianapolis): What proportion of the children coming under your observation, Dr. Town, arrived at anything like an average grade for their years?

Dr. Mary E. Pogue (closing the discussion on her part): I am just going to say a word in reference to an article that appeared in *The Century*. I feel, somehow, that we are going to have to pull this subject into psychiatry. We are not as far along as the French are, or as we ought to be because we do not understand the symptom-complex by name. This article talks about an exceptional child—an atypical one. I have never yet been able to read an article that did not speak of "a perfectly normal child but it could not read." Such a case is

extremely unusual. Certainly a child who cannot read at the age of twelve years is out of its environment. Think of all that he is shut out of, not only from the knowledge of current events, but the past.

There are some insane people who are very exceptional, and very atypical, but if we are going to put that name for them we shall throw out all we have done in the past. It is unfortunate to have insane, and unfortunate to have children who are below the normal, but they are here and they come to you to be educated. We are not dealing with normal children, it is true, but we can bring them up so that they may live very beautiful lives and they may be lived with. I have two boys in high school now. I do not know that they are normal, I do not know at all what the future may hold for them, and I am at a loss to know how to guide them further.

As I say, I never saw an article of this kind but that it so clouds the meaning that it is not readily grasped. It may please parents to have someone say "the child is perfectly normal, but he cannot read, or he cannot write," but that does not help us much in our studies.

As to the tonsils: every impediment should be removed and every possible chance given the child.

I have great respect for the Binet test. It is the very best thing we have by which to diagnose these cases. I was very glad to hear what Miss Schmidt had to say of the work in the juvenile court. The Binet test, of course, tells you little in regard to the higher-grade cases. A child may be able to read, and from the beginning of the treatment may be able to tell the difference between advent and event and yet not be able to dress herself, or care for herself in any way. The Binet test would not show that. As Miss Schmidt said of the case she used in illustration, the boy could be trusted to drive the milk wagon, but he could not pass above the ninth year in the Binet test.

Perhaps that will come with time. Perhaps we do not yet know the full possibilities of it. But even with all of this worked out, perhaps they may always have to be in custody. I have children going about town, spending their own money and living very pleasant lives, while there are others, passing the same grade in the test, who cannot do this.

I am sure we are going to know more about heredity. We see different classes of cases in the different schools. When I was at Lincoln I got a very different idea of the importance of heredity than I had ever had before. It is such an enormous cost to care for such a child all his life, but I am sure as we get into the different classes of cases the influence of heredity is different, for the same parents bear other children both earlier and later who are normal, so we are forced to look for other causes back in the family history which are hard to get at. I firmly believe, particularly with the mongolian, that we can prevent such children, not only at birth, but when they are on the way. Something occurs during pregnancy which it is perfectly possible to prevent, which causes this terrible result. Sometimes the mother does not want it, or has no food for it, and for two or three years the child did not grow at all, and then it seemed to take a start and by the age of seven years it was a perfectly normal child, physically, but mentally and neurologically it was not.

From among the students of our time we shall have a common name for all of these conditions and shall take steps to diagnose and stop the difficulty early. It is most confusing to talk in the same terms of a child that is feeble-minded, or under developed, an imbecile or insane.

With the insane it is different. They get well and we turn them out, but with the truly amented, they must always live in an environment which is, in a measure, a closed and restricted one, but we can educate them and bring them up to a point where they may live very beautiful lives and where they may be lived with with pleasure.

Dr. Clara Town (closing the discussion): In my talk to-day I limited myself entirely to the Binet scale as a diagnostic measure. I did not mean at all to say that the Binet scale gives us a complete analysis of the mentality of the child, as Miss Schmidt seemed to think.

At Lincoln we are just getting up a little syllabus giving an examination for children. It has been my work to prepare the mental. It is divided into two sections. One is the mental diagnosis made by the Binet test. The second is the mental analysis which is an entirely different affair, requiring much more time and dealing with every mental process we know of. For diagnosis, however, I believe that the Binet scale is all that is necessary. Binet himself used a great deal more in his work and all his claim for the test, when he put it out, was a diagnostic measure.

So far as heredity goes, I cannot see but that it does play a large part. Since I have been at Lincoln I have been collecting statistics of families represented by more than three children. We have 54 families represented by more than three children. We have five families represented by five children each. We have thirteen by three children each and the rest are two.

Only last week we received a girl whose brother came to us the week before. They are from a family of seven feeble-minded children. Last week we received a little boy whose mother did not know who was the father of the child. She is one of four sisters, all living that sort of a life and all feeble-minded. That is just one day, and that is repeated day after day, over and over again.

According to statistics, all the offspring of a feeble-minded person need not necessarily be feeble-minded. Not unless both are feeble-minded, and the children of feeble-minded parents. Under no other circumstances would one expect all the children to be feeble-minded.

In answer to Dr. Corwin I will say that the children at Lincoln are not relieved of their adenoids at all, but I took great care to exclude eye and ear defects from the diagnosis. That is, if results are determined by eye or ear defects I do not put that into the scale.

As to the proportion of the patients in an institution who should be allowed to go out, and when, I would say, none of them, ever. Unfortunately, the parents are allowed to take them out. We have one child who has been taken out four times by her parents and each time she comes back with a baby—feeble-minded. She should be kept there for all time.

Of course the purely backward child is one that I did not take into consideration. That is an exceptional child. But a truly feeble-minded child, committed to an institution should stay there. You asked for averages: 18 out of 373 consecutive admissions were backward children. In each instance there was a retardation of one or two years. Five of the 373 ranked as normal, two entirely normal and sent home. The other three were practically neurotic, in whom we expect some sort of a neuroses to develop. Some were young and we shall have to await developments.

THE PREVENTION OF INSANITY*

W. A. EVANS, M.D.

CHICAGO

I feel that it is scarcely necessary that I should explain to you that I am not going to make a technical talk. I think your chairman is right in saying that I am going to address you, rather than that I am going to read a paper.

It has been my privilege to cooperate with Dr. Mefford in the preparations for this meeting. It was my privilege to consider with him the meeting in its initial stages, to consult with him as to the purposes and objects of such a meeting as this and as to the trend that it would take.

* Read in a Symposium on Mental Diseases at Hotel La Salle, Chicago, April 18, 1912.

You have your own technical societies, and the programs of the societies with which you are connected make provision for the discussion of technical subjects. By technical subjects I mean discussion not only of administrative problems as they present themselves to you, but also discussion of scientific problems.

If this is true, then where is there a field for this particular meeting? If you have your own associations in some of which you discuss nervous diseases and insanity from a scientific standpoint, and others in which you discuss administrative problems, and still others in which you discuss partly nervous and partly administrative questions, why another association?

The answer to that is the only purpose I have in occupying the few moments I shall take of your time to-day. The answer to that question is, in my mind, that you who are engaged in the care of the insane should come more closely in touch with the general profession, but what is of greater consequence still, that you should come more closely in touch with the general body of the people.

I believe that there has been a loss on your part, and I am sure there has been a loss on the part of the people from the fact that in recent years insanity, and the treatment and cure of insanity, have been things apart.

Now unquestionably we have profited by the better custodial care of the insane in recent years; by the fact that they are segregated; by the fact that they are held in institutions, in closed communities; but we have lost by reason of the fact that these closed communities have closed the mind of the general public to the consideration of them.

People are, perhaps, giving less thought, certainly less active thought, to the insane since the insane have been placed in closed communities than they did in the days when the insane were in the poor houses, or on the streets, or in the households.

There has been a disposition to avoid the question, some disposition to drop it and to occupy the public mind with other things.

Now I am of the opinion that the time has come to bring some phases of this insanity question more largely into public view than it has been. This, of course, comes under the head of the prevention of insanity. I believe that the insane will be more intelligently handled by the family doctor; will be more accurately and promptly diagnosed by the family doctor if you men who are in charge of these institutions will in some way arrange to more frequently come before general groups of medical men; if in some way you will get the general societies to meet more frequently in your institutions and make more constant use of the material of your institutions.

Of course nobody appreciated the difficulty of this situation more than a citizen of Illinois, hence, perhaps, the question has been more acute to us than it otherwise would. Although the decision of our legislature was an adverse one, I do not think that affects the general situation. The real difficulty lies in the fact that the hospital men have not gone to the public often enough. Had they put the question of insanity before the public as frequently, forcefully and intelligently as they should have done I do not

believe it would have been possible even for Mr. Shurtleff in the heyday of his power to bring about the decision he did. Such an action as this should not keep you away from the public, but should add an incentive for you to get to the public.

My principal theme is the prevention of insanity. Prevention is, in part, social; in part educational, and in part physical. Whether we deal with one question (or one phase of this question) or another we are dealing with all. These things that make for insanity, more particularly along the physical line, have their social aspect.

Let us take the matter of venereal disease which looms so large in insanity. The control of venereal disease is, essentially, a matter of public education. There is need for education, and education from many stand-points. To the campaign for the control of venereal disease, a warfare which must be fought out and won within the next few years, you gentlemen who are in control of institutions can bring a great many facts that would be of vital importance. In fact I know of no place from which such a wealth of ammunition can be brought for this fight as the studies which can be made in the insane asylums.

This fight is going to be fought, and without very much further delay. The armies are assembling for this fight and these armies are of various kinds.

There is the army that is marching under the banner of "The Prevention of Blindness." I believe that, when all the armies gather on the battle field, it is but fitting and proper that they should find there other armies ready with their ammunition, and one of these will be the army working in the insane asylums, which has learned of venereal disease from the standpoint of insanity and is ready to fight on the left wing as those who are fighting blindness are fighting on the right wing.

I believe that this is as much of an idea as I can give you. Of course it means two things: it means a closer study of the people under your care with a view to gathering information on this point. This might be called the preparation for war, the gathering of data that may be used when you come to the great question of the prevention of insanity. The other thing that is fundamental is that you should make use of publicity. Avail yourselves of all your avenues of power and usefulness for the purpose of public education. In other words, you should come out of your isolation, for there is no question but that you have been as much isolated as those under your care. You have been closed communities, just as your charges have been in closed communities.

In the fight for the prevention of insanity, the next step in this matter of the control of insanity cannot be fought from the cloister. It must be fought in the open by the men in touch with the general public.

That is the reason for this meeting, as I understand it. That is why this congregation is together — in order that something might be done to bring those in charge of institutions more closely in touch with the general public: more closely in touch with the general profession, and perhaps more than this, that you might each go home with this as a central idea, that the work for the prevention of insanity calls for the

close working together of those in charge of institutions, the general profession and the general public.

DISCUSSION

Dr. K. S. West (Cleveland, Ohio): This is undoubtedly a very interesting question, and one which requires a good deal of thought to work out, and I feel that the superintendents and those living in hospitals for the insane have been separated from the general run of physicians and that we are, in a way, a closed book.

It is due, perhaps in a way, to the fact that in but very few schools do they include mental diseases in the curriculum. They may have a few lectures just before graduation and that is the extent of their knowledge. Physicians go into practice and they visit these institutions very seldom. As a result we become isolated and it is very difficult to get together.

During the past year we have received from the governor of Ohio permission to establish an outside clinic in connection with any of the large city institutions—like those of Columbus, Dayton and Cincinnati. This is for the inspection of borderland cases. Any one having these cases may come and get information and advice, especially when they feel they are on the borderland of a break down. We hope in this way to get a great many borderland cases and, in time, to get in touch with a great many of the general practitioners.

In the large cities, like New York, they have psychopathic departments, but in the small cities and the towns this is not practical. We feel that if those just breaking down will consult with men competent to advise them a great deal can be done for them. This is just being worked out, starting in Cleveland, and it is surprising to note the number and the variety of people who come to the institution for advice. The newspapers are in sympathy with the work and gave us a four-column write-up on the front page of the paper. As it is starting out, we expect to do a great deal of good by right instruction of the laity in these matters.

Dr. C. H. Clark (Cleveland, Ohio): My personal experience has been, in regard to the shut-in condition of those in charge of institutions, that in medical meetings throughout the state and the national meetings which I attend, very little interest is manifested. Those whom I met, inquiring where I was from, upon hearing that I have been for eighteen years in an insane asylum, look at me with sort of "I-thought-so" expression and pass on.

I came to Chicago at one time to see an intern with a view to his taking a place in the hospital and while there heard one of your foremost surgeons say, relative to a young man, "Oh, he went off into an institution a year or so ago and no one ever hears of him since."

The physicians in institutions are looked upon as isolated, not so much, however, to-day, I believe, as they used to be. The world is finding out that we are alive and doing things, and the medical men are coming to the institutions and getting acquainted with the work being done.

Dr. Frank P. Norbury (Springfield, Ill.): I wish to speak on behalf of the recently organized association having in mind the education of the public on matters pertaining to insanity. I refer to the National Committee on Mental Hygiene. This committee is endowed (the name of the philanthropist has not been made public), and is a working committee with headquarters in New York City; as yet the west has not come in touch with its work. Dr. Barker of Johns Hopkins is the chairman. Dr. Thomas A. Salmon is the executive officer and is now organizing and extending the usefulness of this work outside of New York. I received a communication from him a day or two ago in which he enlisted the interest and support of the Illinois medical profession.

You can readily see, with such interest and cooperation in each state, and by treating all subjects from a public-health standpoint, thus creating new attitudes toward public health measures, what may be accomplished.

We have in this city of Chicago a Society on Mental Hygiene which has done great work in looking up the histories of those committed to public institutions and in after-care suggestions.

Regarding the question of the isolation of hospital men: I think that is more apparent than real. My experience in the Mississippi Valley, extending over 25 years, is that medical men and medical societies will welcome institutional men if they will make themselves known.

This reminds me of Osler's remark to the army men, warning them against self-isolation; he said that if they were isolated, it was their own fault. Medical men and the social world stand ready to help institution men; all that is necessary is to do their part. It has been my experience that a very fair proportion of the officers of our state and national societies have been from among the institution men. Not only that, but the men in the state and national societies are willing, and glad, to cooperate with institutions in the work they are doing. I think the public are really in better touch, and more anxious to work with the institution medical men than they ever were before. It remains for us to say whether the work shall go on. I have little sympathy with the medical man who pleads isolation. His problem is with himself.

So far as medical literature is concerned: if you consult the proceedings of the medical societies as found in the *Medical Record*, *The Journal A. M. A.*, and other standard current medical journals, you will find that there is scarcely an issue in which there is not something on mental diseases, or literature contributing to psychiatry. And then in addition take the work which Dr. Evans is doing in one of our standard dailies. The work he is doing is great work. In the standard current magazine literature, in such magazines as *The American Magazine*, *McClures*, *The Century*, *Harpers*, *The Atlantic Monthly* and many others which I could name, much attention is given to constructive thought, sociology, economics, philanthropy, popular science, all subjects closely allied to the work we are doing.

I try to keep in touch with this progress and I can say truly that there is aggressive educational work going on.

What I should like to see would be a strong association springing up here in the Mississippi Valley not only for the enlightenment of medical men, but the public as well. We have its nucleus here and I can assure you that so far as my knowledge goes, Illinois is willing to do what it can toward this end.

H. A. Tomlinson (St. Peter, Minn.): If you will pardon me, I would like to say something of my experience. When I took charge of the institution some years ago there was practically no interest whatever in either it or the general subject of insanity. The furor over surgery had just come on at that time and there was little interest in anything else.

I was asked to read a paper at the state society meeting. I did so with hesitancy, feeling that there was little interest in the subject. This feeling I found to be well founded for before I was half through the room was empty.

That gave me an idea. From that time on I took another tack. All of the papers I read after that were on some medical or surgical topic of general interest without mentioning the word "insanity." In time, as I was particularly interested in pathology, I began to excite some little interest and attract some attention to the institution as a possible source of information.

I kept this up and during the next ten years succeeded in organizing a clinic—not on insanity, however; I still did not mention insanity—but on general medicine in which myself and staff took part. We had four to six a year, we took up diseases of the heart, of the gastro-intestinal tract, etc., and whatever was said of nervous diseases was incidental. We succeeded in getting the men in the immediate neighborhood interested.

Out of this grew another advantage. We succeeded every summer in getting from the state society four to six medical students to come and work in the laboratory and, also, to get considerable incidental training in general medicine. Still we did not say anything about insanity!

In this way we succeeded in disseminating, through the state society, and through these young men considerable knowledge of the work of the institution and considerable information regarding the preventive measures for the control of insanity.

We went further than this. We went to work through our society of charities and correction, of which I was afterward president, through our state tuberculosis society, through our sanitation society, of which I was afterward president, not saying a word in any of them of insanity. The association of sanitation had opportunities to study social questions, which enabled us to have laws passed in Minnesota, which enabled us to have agents, or visitors, who kept in touch with the patients after they left the hospital. They looked after their welfare and tried to interest the families in the neighborhood in the patients who had no immediate families, in their welfare.

Now you may think that this is a good deal of progress, but it is not. So far as the general public is concerned the ideas regarding insanity are the same as they were 300 years ago. The insane man, to their mind, is still either a criminal or a pauper.

To illustrate how general this idea is: we had a member of the faculty of the university visiting the hospital—a very intelligent man, as you would naturally suppose, a man of culture and education. He stopped beside one patient and said: "How long is he in for and what was he sent up for?" A member of the medical profession also came in one time and after going through the various departments of the hospital, in which he evinced much interest, he said: "Now I should like to see some of the cells."

Now if such ideas as that are prevalent among our own profession, and among the best-informed of the laity, what can one expect of the general public? In my work I find it to be true to fact that the public still regard the insane as either a degenerate, pauper or criminal, and instead of trying to educate them out of it, the medical profession is constantly trying to cloak it over by calling it by some other name. They seem to feel that it is not such a stigma to say that such-and-such a person is suffering from a psycho-neurosis as to say, plainly, that he is insane. In other words, the idea still exists, not only in the mind of the laity, but the profession as well, that to call a man insane is to say something derogatory of his character.

This is further shown in our courts. A man may be restrained at home, or may be in a hospital, or under private care, but the moment he is committed to an insane asylum he is "being deprived of his personal liberty without due process of law."

A woman wrote me quite a long letter not so very long ago about her son in which she detailed his case quite completely, and then she closed the letter by saying: "However, my son is not insane, he is only crazy!"

The medical profession as well as the laity must get rid of the idea that insanity is something that exists outside the individual. Until we get rid of that we shall not make much progress.

We have, in Minnesota, a voluntary commitment law—a hospital to which a man may come voluntarily and as long as they are there they are only crazy. They may get well and leave and they were not insane, but if their condition becomes such that they are committed to the hospital proper they then become insane!

Another illustration of this attitude: at the last state medical society meeting I read a paper which was part of a symposium on kidney disease. In speaking of that I mentioned the fact that our institutions were unworked mines of research material in chronic diseases because of the fact that the people live so long, giving us a much better chance to study these chronic conditions than we had elsewhere. After the meeting a member of the faculty came to me and said that he thought it would be a nice thing if medical students could come down there and study insanity. He could not get from his mind at all the fact that it was not insanity that was being studied but diseases of the kidney. Because the subject happened to have some nervous disorders did not affect his kidney condition in the slightest.

Instead of our blaming the public for this lack of knowledge and interest, I believe the blame should properly lie with the medical profession itself. It is a fact, however, that the medical profession does not understand the conditions presenting in the insane, or the opportunities for study offered by our institutions. The large number of people gathered together here represent a large number of degenerative changes and every patient is living under experimental conditions so that he may be studied just as one would conduct other laboratory studies, but the truth is, it takes a lot of time, patience and persistence to get at these facts and to correlate them.

From my own experience I have found that the best plan is to interest medical men by getting them to look at these institutions as general hospitals where certain conditions in the patient make it necessary to provide a special place and men to care for him. If they would familiarize themselves as they might and should, taking advantage of these clinical opportunities, and opportunities in pathology, and if we could interest the general profession in what is going on here a great deal could be done to correct this medieval belief regarding insanity.

Every patient who comes into the hospital is put to bed, just as they are in the general hospitals, and they are studied as they would be in a general hospital from the clinical side and from the laboratory side. Then the laboratory findings and the clinical findings are correlated. We do not, in this, consider the insanity at all. We do not call anything by any name, simply record the facts observed. In all of this I have stimulated my staff to keep up to the times in all diagnostic measures and they are, of course, kept on the alert by the visits of other doctors to whom they must be able to talk of the clinical facts and be able to demonstrate to visiting physicians the conditions under discussion. The consequence is, we have a general hospital, and in the district tributary to it, it is looked upon as a general hospital. The medical men come there and with the special subject in which they are interested they, incidentally, learn something of insanity and they also learn, what is of a great deal more importance, the relation of the general condition to the mental condition of the individual.

W. T. Mefford: I will ask Dr. Evans, before closing, to say something on the subject of what Dr. Norbury has said—regarding the forming of a permanent society.

Dr. W. A. Evans (closing the discussion): I take it that by this time you have a pretty clear idea as to the degree of isolation of those who are working in hospitals for the insane. I take it that there is not a very great difference between what I have said and what others have said. You know that there has been a great deal of isolation and it has been attributed to the fact that you have locked the doors, as evidenced by the fact that the great men among you who have come out among their brother practitioners have held positions of honor and prominence. Therefore, if there has been any isolation, I believe we have agreed that it arises out of our opinions as to what constitutes isolation. In the broader sense, in the sense that means that those of the profession who are handling problems in which the public is vitally interested and concerned should be in close relation to the public, in that sense we are all isolated.

I was struck last summer, at a meeting of the National Education Association, with the fact that these teachers are in very close touch with their clients.

In this contest which we are having now, a contest which brings us out prominently in opposition to the Christian Scientists and into realization that the Christian Scientists are real factors in it, I have been struck with the contrast between their facilities for getting to the public with their ideas, that we know to be incorrect and misleading, and our wholly inadequate, or total lack of, facilities for getting to the public with our correct ideas; with their facilities for gathering the people about them, rallying them behind their proposition.

From this point on I am going to speak more concretely. Dr. Norbury has called your attention to two facilities. One the National Society for Mental Hygiene, with its branches; and another the *Quarterly*. I have written to the *Quarterly*. I wrote an article which I thought would appeal to the people in

charge of institutions. I do not believe I have ever heard from it, either directly or indirecily!

Now here is what I have in mind: Last Saturday I was talking with Mr. Mann and I found that he was distressed because he could not get medical information before his district. He said he had no way of letting the people of his district know what public health measures were necessary. He said: "Now I can go to the department and order 100,000 copies of a bulletin on hog cholera, or whatever I want sent out, distributed to all of the people in my district. It is written clearly, and the people understand it; it does good. I sent out recently a report on a typhoid epidemic in North Yakima. The people were interested in it. But I can get nothing that applies to medical matters in my own district."

Now people are interested in the prevention of insanity and the diseases which occur among the insane. This Dr. Tomlinson has shown you very clearly. We hope that the society on mental hygiene will be able to reach some means of getting to the people. And by "people" I do not mean only academic people, but people whose effort and thought are not specialized, who are thinking about other things and will give a modicum amount of thought if it is presented to them in easily digestible manner and in easily comprehended shape, to these things. I trust that this will come from the Society on Mental Hygiene.

I do not see, however, why the existence of that society should prevent us from going on with others. What I have in mind is some society which will prepare reports that may be sent out which are as easy to understand as the reports of the Department of Agriculture, which will give the plans and conclusions reached by your institutions. For instance, a bulletin issued from Elgin on the relation of venereal disease to insanity; very positive and direct and mailed all over the state of Illinois; a bulletin from Kankakee on the relation of drug habits to insanity; another from Jacksonville on heredity. I am taking all of my illustrations from this one state and widely scattered over the state of Illinois. I believe, as a result of that, you would not have reason to complain of the lack of interest in the subject of insanity, and I believe you are all, rightly, complaining of such a lack at the present time.

Dr. Tomlinson has told you that the only way to get a hearing before the medical societies is to go in under false pretenses—offer a five dollar bill for twenty-five cents and when you have them cornered they find they have a five dollar bill that will not pass—get them there with the idea that they are to hear of one thing and then give them another.

I think a far better plan is to study insanity from the standpoint of those things in which they are interested. Assume that they are interested in the things in which they would naturally and logically be interested; that does not necessarily mean that insanity is not tied up with the things in which they are interested.

For instance: read a paper on lead poisoning and say that the observations were made from material in the hospital. Read a paper on venereal disease, or on any general disease. I remember very vividly some of the things in Dr. Tomlinson's work on tuberculosis in the insane and his generous use, in writing his paper on tuberculosis, of the material offered in the institutions. He had something to say of the modifications of tuberculosis in the insane.

Now I come to the main point, the subject of Dr. Mefford's remark as to whether this society should be continued or not. I merely offer this as my judgment, that you consider it, see if it is your judgment or not, and that you, at some time or another, before you separate, try to discover what is the majority judgment of the society.

So far as the purely technical question is concerned, we have societies enough. So far as the discussion of administrative questions is concerned, there are societies enough. But I think we have gained something by gathering together for the consideration of methods of treatment and prevention of insanity, and I believe something could be gained by meeting each year for this purpose. For instance, I would suggest that next year you devote a whole day to the discussion of the

matter of writing tracts. One might think them more effectual written one way, and another another, and the various methods could be weighed and considered.

I remember a discussion at the meeting for the prevention of infant mortality by Dr. Gerstenberger of Cleveland, at the meeting held at New Haven, Conn., of the relative value of posters on telegraph poles, booklets and leaflets. People whom one kind would reach another would not. Another is the method of getting to the people by public lectures. Whether it would be advisable for superintendents and members of the staff of Oshkosh (for instance) to have a meeting on the prevention of nervous diseases and insanity in the environment about Oshkosh, and see how a campaign could be organized. Another thing you might consider is research work in your institutions. Not necessarily research methods bearing upon insanity, but research bearing upon sickness among the insane.

And then that you vote, at the end of your session, whether or not you think there is material here for annual meetings.

FREUD'S PSYCHOTHERAPY *

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Before discussing Freud's theories, I think it not unprofitable to cast a historical glance at contemporaneous mental therapeutics. In this respect I shall limit myself to the past two or three decades, during which time the entire conception of psychotherapy was included in the words hypnotism and suggestion. It cannot be denied that both hypnotism and suggestion have directly or indirectly laid for us the foundations of all modern psychotherapeutic endeavor. Though the rôle of hypnotism in the evolution of rational psychotherapy is not to be underestimated, we cannot ascribe to it all the wonderful curative powers attributed to it by those unacquainted with its practice. I may state without fear of contradiction that the better-informed physicians and neurologists have some time since abandoned the therapeutic practice of hypnotism. Those of us who have had actual experience with it are disappointed. The lesson we have learned is that to suggest to the patient that his symptoms will be relieved by hypnotism, or that his disease will be cured thereby, is not tantamount to curing him. Undoubtedly there have been cures, but they were few and far between. As a general proposition, the effects of hypnotism were not lasting, and there was the additional objection that the patient was made dependent on his physician. The little initiative originally present in the neurotic seemed to vanish before the operator's personality. Perhaps the weightiest reason for abandoning hypnosis was that the practice became disreputable; for no sooner had the great horde

* Read before the meeting of the South Side Branch of the Chicago Medical Society, March 26, 1912.

of quacks learned of the new therapy than they greedily seized on and made it their own. In so shameless a manner was hypnosis exploited by the charlatans in public exhibitions and other objectionable ways, that physicians were loath even to profess an acquaintance with it, not to speak of applying it in legitimate practice.

As the expression of a timely reaction against hypnotism must be mentioned a book written by Paul Dubois, entitled "The Psychic Treatment of Nervous Disorders." In this volume the author severely arraigns hypnotism and seeks to substitute for it a method of his own, which he claims is not even based on suggestion. His therapy, he maintains, rests on the solid foundations of reasoning, persuasion and right living. Dubois' book, written in an easy and readable style and addressed to the layman as well as the general practitioner, has had an enormous sale. Among others, one great objection to this book is its indigestible philosophy, which the reader is compelled to swallow before arriving at the author's explanation of his methods. Very few, I think, care to take their conceptions of the universe and a solution of the problem of existence from a popular book on treatment. In spite of its defects, this work had had a salutary influence on the general practitioner. But the final word on psychotherapy was yet to come.

Before proceeding with the main portion of our theme, I cannot refrain from briefly referring in a satirical vein to a mushroom-growth in misguided mental therapy, which some few of the "innocents" in our profession have taken seriously—I refer to the Emmanuel Movement, also called Religious Psychology. This movement was inaugurated by an up-to-date clergyman of Boston, who saw and heard sufficiently of Mrs. Eddy's success not to wish for similar results. While craving for the benefits of another Christian Science, he abhorred the idea of plagiarizing *in toto* that great aberration of the human mind. An opportunity for something new was not long in presenting itself. Hypnotism, discarded by the medical profession, had become a waif, ready to throw itself into the arms of any person with fatherly feelings. A mere glance was sufficient for the Reverend Dr. Worcester to foresee possibilities. Like other enthusiasts before him he at once embraced this fatherless child, but unlike others, he took it to church, gave it a bath in the form of proper baptism, clothed it in religious garb, named it Christian Psychology, and ordered the bells to be rung throughout the land. Every newspaper and magazine in the country was given an advance copy of the "story," and Emmanuel Movement was properly launched. Emmanuel Church, previously half empty, had suddenly become filled to overflowing. The founder of the movement, a practical man, avoided the error of his half-sister, Mrs. Eddy, by not antagonizing the medical profession; he did more than that—he even advertised for a medical ally. A keen observer of human nature, he felt sure of finding some one willing to constitute himself the rear-end of a movement which promised a free mention in the public press. The Reverend Dr. Worcester did

not have to seek long before he discovered a doctor of medicine and one of theology, both willing to go with him as far as he liked. In the proportion of two to one (two of theology and one of medicine) this trio jointly compounded a mixture of journalistic platitudes and administered the same to a credulous public. To avoid Dr. Wiley's wrath, the "holy" remedy was placed between two covers, labeled with the analysis-defying title, "Religion and Medicine," and sold at the regular novel price. Rumors emanating from friendly sources will have it that it was the "best seller" of the year.

In concluding this brief account of the life history of the Emmanuel Movement it is painful to report that though the religiomedical infant cried quite lustily at its birth only three years ago, it has already fallen into senile decrepitude, its speech being now inaudible above a whisper.

Freud's psychotherapy by psycho-analysis is not only the latest, but also the most stubbornly fought aspirant for therapeutic honors. Psycho-analysis, which preceded it and is part of it, is almost entirely Sigmund Freud's work. For some time in his career associated with Charcot, Freud was early impressed with the great Frenchman's psychologic conception of the neuroses. When he returned to Vienna he felt himself attracted to an elder colleague, Dr. Breuer, who worked along similar lines. In 1895 came forth their "Studies in Hysteria," which foreshadowed Freud's future labors. Shortly after the appearance of this joint work the co-authorship was dissolved, but Freud pushed boldly forward, heedless of whither his theories might lead him. He published the "*Traumdeutung*" (dream interpretation) in 1900 and five years later the "*Drei Abhandlungen einer Sexualtheorie*" (three contributions to the sexual theory). Numerous articles now flowed from his facile pen, all dealing with his theories on the psychoneuroses and their psycho-analytic treatment.

Ignored and ridiculed at first, his views are now the most discussed topic in all scientific literature, and threaten to overthrow many of our most cherished conceptions.

In addition to Freud's own labors, the new Zurich School of psychiatry, which readily embraced Freud's doctrines, has contributed greatly toward bringing his views before the public. Especially Jung, the most energetic and brilliant worker of that school, has helped to reinforce Freud by the publication of his "*Diagnostische Associations-Studien*" and the "*Psychologie der Dementia Præcox*." By means of a series of word association tests he arrives at conclusions similar to those of Freud, which is equivalent to saying that Freud's psychology receives corroboration from an independent source, namely, the psychologic laboratory.

Irrespective of whether all or only some of Freud's contentions will stand the test of time, physicians everywhere are eagerly inquiring: What is this new psychotherapy?

In order to stimulate independent study I shall endeavor to answer this question not by a three-word definition, but by giving a brief summary of Freud's theories. For fuller information the reader must consult Freud's original writings, most of which have recently been translated

into good English; also the writings of his most illustrious followers in America, Ernest Jones and James Putnam.

The Freudian School assumes that the psychoneuroses are essentially caused by the perverted interaction of misplaced complexes. By complex Freud understands a central thought, or experience, or wish, around which cluster or are constellated numerous other, but less important mental states. These complexes with their numerous ramifications, he maintains, play an important rôle in normal life. They are of still greater significance in the lives of neurotics. According to Freud, they are at bottom the cause of the various physical and mental symptoms found in the subjects of hysteria and the allied neuroses.

As each complex is accompanied by a tonal quality, that is, with a feeling of either pleasure or the reverse, we possess the ability to assimilate it with our previous experiences of either pleasure or pain. The latter we usually seek to neutralize and so to synthesize with our personality by giving it the form of adequate outward expression. One instance may suffice to elucidate this point. An individual, overcome with grief over the loss of a beloved member of his family, gives vent to his pent-up feelings by cries and sobs and the frequent repetition in prose or poetry of the deceased person's noble deeds. After a period, varying in different individuals, the mourner realizes the uselessness of everlasting demonstrations of grief—he again thinks of the living and of his duties toward them. He has not shirked the work of bringing this grief into relation with previous experiences, reasoned about it, and threw it out of his mind, has reconciled himself to the inevitable. In the words of Freud, his grief complex has been "ab-reacted." Everyday activities are resumed and the individual escapes unharmed. Contrast with such a case the fate of a person who is so overpowered and paralyzed with grief that he cannot even shed tears, whose "grief complex" cannot adjust itself to the individual's needs, but remains as a part of his subconsciousness to harass him by day and night, and you get an idea of what takes place in the neurotic's life. All our experiences, pleasant or unpleasant, particularly the latter, must be adjusted to and brought into relation with our previous experiences in the broad daylight of clear consciousness and not pushed into the night of the subconscious.

What becomes of the numerous desires and ill-defined longings which are with great difficulty assimilated because of their inherently immoral or unconventional character? When not entirely satisfied, because civilization with its code of ethics does not always permit of such modes of reaction, their respective complexes are thrown out by a process of reasoning or, what is worse, are repressed, ignored, or pushed into the region which does not bear the light of day—the "unconscious." The expression "repressed complex" is frequently used in Freud's writings to denote such incomplete reactions. The normal person harbors many such complexes in his unconsciousness without experiencing either physical or mental harm. Not so the one who has the "neurotic constitution." In him repressed complexes often act as foreign bodies, taking on an independent automatic existence, or attaching themselves, like parasites, to

other mental states. While sojourning in these lower regions, complexes cannot be controlled, the wires are broken and messages cannot be received from the main station — the conscious personality of the individual. It therefore happens that the stream of feeling accompanying the unpleasant complexes has been transferred to indifferent mental processes, thus replacing the original complex. Such abnormal outlets may find a mental direction and we have a "phobia" as the result. When a complex feeling attaches itself to the bodily processes, in the so-called conversion hysteria, we may have such symptoms as tremor or paralysis. Because of the accompanying feeling tone, which really belongs to another complex, the patient may thereby experience great satisfaction, unconscious gratification. This to Freud explains the great obstinacy with which patients cling to their symptoms.

In discussing the character of repressed complexes Freud comes to the inevitable conclusion that they are mostly of a sexual content. This conviction was forced on him while attempting to unravel the various complexes in his patients. He found in his later studies that the subjects of the neuroses are more or less abnormal in their sexual habits or desires.

In his theoretical considerations he emphasizes the important rôle played by sexuality in its widest sense and is therefore not at all surprised that most of the repressed desires should belong to the sexual life of the individual.

Psychotherapy, practiced according to Freud, endeavors in various ways to recognize the disordered mechanism leading a parasitic existence and causing conversions, substitutions, and symbolic connections. The new method has set itself the task of seeking out the cause — the disordered mental complex — and then to restore proper mental reactions; in other words, to create anew sound thinking. This may be called a process of reeducation from the bottom up.

OUTLINE OF FREUD'S TECHNIC

Freud's earliest efforts in psycho-analysis were made with the patient in light hypnosis. By this method he supposed that he had tapped the subconscious and removed the cleft between it and the conscious. Forgotten experiences that had been pushed into the region of the subconscious were again recalled and brought back into the higher consciousness. They had been given complete verbal expression and lived over as fully as possible. The complexes were, to use Freud's vernacular, ab-reacted. This was equivalent to a cure.

Somewhat later Freud varied this method by substituting for hypnosis a state of complete relaxation. The patient was seated on a chair and asked to close his eyes, while the physician was stationed behind him, so as not to interfere with his flow of ideas. The patient was requested to give his thoughts full freedom to enter his mind without exercising any inhibitory control or censorship over them, and then to repeat to his physician the stray ideas which occupied him during this relaxed state. In other words, everything that entered the patient's mind, agreeable or otherwise, attractive or repulsive, was to be told his physician without

suppressing any of its contents. During these sittings sufficient data were brought forth to furnish Freud with a clue to the hidden or suppressed mental complex. Only occasionally the hidden complex itself thus came to the surface. In the majority of cases, however, the patient's statements merely furnished hints to more important thoughts or complexes yet to be searched out. In the succeeding séances more relevant facts were brought out until the entire knot was disentangled. This, the so-called free-association method, is now largely supplemented by Jung's word association tests, which Freud and his school adopted *in toto*. To determine the submerged complexes by word association tests, they proceed somewhat as follows: A list of words, from 100 to 200, is taken, among which are found some that in all probability point to the repressed complexes. The latter may have been surmised from the free association tests, the patient's conversation or the narration of his dreams, on which Freud places the greatest value. The complex-words are interspersed after every fourth or fifth word of the series. On hearing the word read the patient is to tell immediately what association it calls forth. The time record is made and the next word is proceeded with. The most practical way for recording time is by a stop-watch graduated into fifths of a second. The entire series of words is read and the patient's answers are noted. Within an hour the list is reread in the same way and the patient is asked to repeat the same associations as the first time, if he can recall them. No time record is made of the repeated test, but the replies are carefully noted for comparison with the first answers. This is what usually happens: As soon as one of the words in the list touches a complex-indicator, marked disturbances in association are observed. Of these the following have been enumerated: (a) increased length of reaction time, (b) superficiality of the association, (c) forgetting of the association on repetition, (d) peculiarity in the type of association; that is, the latter may have some direct connection with the complex, but no apparent association with the word given; (e) irradiation of the disturbance to the next one or two associations.

By means of these association test-words the psychotherapist is enabled to fathom the depths of the subconscious, because the repressed complexes have a very pronounced influence in determining how quickly ideas shall arrive in consciousness and also which ideas shall arrive. After the suppressed emotional complex has been found, the facts are frankly stated to the patient and an open confession is secured. The emotion is brought up where it may live itself out and disappear, where it may be "ab-reacted." By these methods, then, the patient has been helped to overcome his gap in memory, to resurrect the disturbing complexes, to unite them with his upper consciousness and thus to allow them to be neutralized in a normal manner; henceforth these parasitic complexes cease to exist. We must confess that such psychologic dissection is cumbersome, time-consuming, and requires special skill and training. It is certain also that a special temperament is required to ruthlessly push one's inquiries into every detail of a patient's life, including all

the horrible experiences that he has passed through, not omitting any sexual happenings, be they ever so disgusting.

In Freud's most recent publications the sexual element is even more strongly emphasized than in his early writings. He states that as his experience with psychoneurotics increases, he is irresistibly driven to recognize the various perversions of sex in thought or act as the sole cause of the psychoneuroses. In addition he is convinced that to accomplish results, he is compelled to converse with his patients unconstrainedly in matters sexual. It is on account of these views more than for anything else that Freud and his school have been violently attacked. Possibly Freud is wrong in attaching so much importance to sexuality in the normal life and particularly in that of the psychoneurotic. For me as for others it is difficult to believe that the hub of the universe is sexual gratification, although we must admit that sex is a powerful spring of action in many human activities.

To return to the method just outlined: To say the least, it is complicated and requires patience of a high order. In the interests of therapy a simplified technic is certainly desirable. As at present constituted, many workers engaged in psychotherapy are debarred from utilizing a method which requires, according to Freud himself, months and years to unravel the intricate mental machinery of the psychoneurotic.

In conclusion, I wish to repeat that I have presented only a mere outline of the new psychotherapy by psycho-analysis. To give more would only confuse. Think of it as we may, when we compare this method with any of those that have preceded it, our admiration is challenged for more than one reason. This new psychotherapy has as its basis a plausible psychology, splendid reasoning and a profound acquaintance with the innermost depths of human nature. Regardless of whether Freud's psycho-analytic method will ever become popular in therapeutics, it has certainly opened our eyes to facts hitherto completely ignored or not at all recognized.

400 Reliance Building.

DISCUSSION

Dr. Sydney Kuh: Anybody who doubts the theories of Freud is not only ignorant, but most ignorant. So says Freud. Having thus qualified, I shall proceed to express my doubts.

There are two chapters to the subject of to-night: psychoanalysis as a method used in the study of mental and nervous diseases and psychoanalysis used as a therapeutic aid. About the former a word will suffice. There is no doubt that psychoanalysis has been of material service to us. The work of Young on dementia præcox, for instance, has cleared up that subject to a very marked degree, and in that respect the method has been of great value to the profession. As far as the other phase is concerned, when a new therapeutic agent is suggested, I am in the habit, before trying it out, of asking myself several questions. The first one of these is whether or not it is theoretically a plausible remedy. Secondly, whether the remedy is a safe one. Thirdly, whether the effect produced will be reasonably proportionate to the time expended, to the inconvenience to the patient and physician, to the expense involved, and so forth. Fourthly, whether the new method is less dangerous and more convenient than any other available method.

If we apply these tests to the method of Freud, I must confess that, firstly, to me it does not seem plausible. If that is the case, I may be asked why I have experimented with the method? And I shall answer the question in order to avoid criticisms later on, that it was done because I was interested in the theory. I was interested in learning whether Freud's view of hysteria had any basis in fact. But it is to be remembered that Freud's deductions are based not simply on an analysis of what the patient says, but rather on an interpretation. It is not then a method of observation, but a method of interpretation. I cannot at this time go into the subject of its improbabilities and what I consider absurdities of Freud and his school. I can refer, however, those of you who are sufficiently interested to a discussion which occurred a year ago before the Chicago Medical Society and to two brief pamphlets, one by Ernest Jones on Hamlet, and another by Freud himself entitled "Die heilige Anna Selbdritt," it being a study of the life of Leonardo da Vinci, which are so full of sophistry and as far removed from science as anything that I have ever read. If you are not satisfied with these, read the larger volume of Steckel on the subject of "Dreams" and see if you are capable of wading through the mass of filth it contains. That Freud's psychoanalysis could have the results which he claims for it is improbable, simply because psychoneuroses, such as hysteria, and so forth, are undoubtedly based on something constitutional. Freud himself, who has modified his theory at least four times to my knowledge, has finally been compelled to assume something constitutional as the underlying factor. That something constitutional which has been known for years in the medical profession as a neuropathic constitution, he calls a "psychosexual" constitution. The problem then is, to remove a constitutional defect. That psychoanalysis can do that seems to me impossible.

So far as the second factor is concerned, that of safety, Freud himself speaks of its dangers, the existence of which I can confirm from my personal experience. According to Freud, they consist of this and here is an element that is exceedingly characteristic of Freud and his school. The neurotic individual, he says, has an abnormal libido and since the physician in his psychoanalysis disturbs the old associations of the patient, the latter unconsciously seeks for new ones. He transfers his sexual desire from his former ideal to the physician in question. That sort of thing with an hysterical patient is anything but desirable. It is an exceedingly serious phase of the question which has given trouble to a number of men who have used the method. Interesting as illustrating Freud's consistency is his reference to the abnormal sexual desire of the psycho-neurotic, while in other passages in his works, wherever from his point of view it seems desirable, he speaks of the abnormal frigidity of the same individuals.

As far as the third question is concerned, that of the convenience of the method, Freud himself claims that the treatment requires at least six months and up to three years, and even then, according to him, the result is doubtful. I believe in the majority of these cases if we devote the same amount of time and the same amount of energy that Freud devotes to his patients with other methods, we would achieve equally good results without running the very evident risk that his method, even according to its originator, involves.

One of the objections that has been raised to the Freud theory and his method is that it is simply a form of suggestion. Freud and his pupils deny that emphatically. The same was true of many other therapeutic measures. It is only within recent years that physicians have awakened to the fact that the effect of hypnotism is purely one of suggestion. Metallo-therapy, the "transfer" by means of metal discs applied to the body of hysterical patients, whereby hemi-anesthesia was moved from the one side to the other, was thought to be due to some mysterious influence and not to suggestion. It is interesting in this connection to obtain some idea under what conditions Freud has worked.

Those of you who have been abroad well know with what avidity the intelligent European absorbs current scientific literature, and particularly if that scientific literature involves a sexual element. In my student days one could search

from one end of Germany to the other without being able to find an intelligent individual who had not read Kraft-Ebing's "Psychopathia Sexualis."

The method of Freud has been exploited in the lay press abroad. There is not a well read individual in Germany or Austria who is not familiar with it. When Freud emphasizes the fact that we cannot expect to obtain any results unless the patients are intelligent individuals, he virtually acknowledges the presence of a suggestion. Another point that is made by the Freudian school is that the method is condemned because of ignorance on the part of doctors. This can be easily answered, pointing out that this "ignorance" is shared by such men as Kraepelin, the father of modern psychiatry, the man who of all living individuals has perhaps done the most brilliant psychologic work, excepting only his teacher, Wundt, by Kraepelin's brilliant pupil and one-time collaborator, Aschaffenburg, by Oppenheim in Berlin, and a dozen other Europeans who stand head and shoulders above Freud, and yet these men are classed among the ignorant who cannot see the truth of his theory.

Again the claim is made that the prejudice is based on prudery, which it seems to me is an accusation, as applied to the medical profession, that has at least the charm of novelty. That, again, can be answered when I say that there is amongst the dis-believers in Freud's theories a man like Waecke, who takes to sexual perversion and similar topics as the pig takes to the swill bucket. There is undoubtedly prejudice against the Freud method, and that prejudice is based principally on two factors. The first one of these is that Freud has exploited his method in the daily press in a way which seems offensive even to the Europeans, who are much more liberal with regard to these things than we are here.

Another thing that has aroused a decided prejudice against Freud and his methods has been the very way he has of fighting and critiquing others. This is not the place, nor have I the slightest desire, to ventilate personal grievances, and it is not from that point of view that I refer to the discussion of a year ago. But those of you who are interested in it, not because of what Jones said, but because his methods and the methods of Freud are characteristic of the entire school, may see a typical example of their way of settling a scientific argument, which has aroused sentiment against them. Ernest Jones resorted to things which were simply trickery. He, in a very dramatic way, denied that he had ever spoken of tabes; when in reality he had not mentioned the word tabes, but had spoken of locomotor ataxia instead. He denied certain statements of Freud which were contained in Freud's book and in that way used methods which are hardly legitimate.

On another occasion the essayist of this evening in discussing the same subject, spoke with mock pity in his voice of those who were ultraconservative to such an extent that nothing new appealed to them and broadly hinted that I belonged to that class, when he knew perfectly well that I had tried out the method and discarded it, before he himself had applied it for the first time.

Such arguments, which, I believe, reflect most seriously on those who use them, very naturally arouse suspicions as to the cause which necessitates their use. Most of us believe, correctly or otherwise, that the use of trickery and untruthfulness indicates the impossibility of defending one's point of view by more respectable means.

A really conclusive proof that Freud's theory is not what he claims for it was furnished recently by Isserlin, who reports several cases said to have been "cured" by Freud, but which returned to him with a recurrence of the disease.

In closing, I can only say that I fully agree with my old friend Aschaffenburg, who says that "Freud's method is incorrect for most of the cases; is dangerous for many, and superfluous for all."

Dr. H. I. Davis: Dr. Kuh has taken some of the wind out of my sails. There are many points that he has discussed with which I agree and have agreed with him in previous discussions. Besides our time is limited.

I am thankful to Dr. Grinker for bringing up this subject before you to-night, and for possibly other reasons than he has pointed out. The lack of appreciation of the complexities of mind and the laws governing its activities is respon-

sible, in a general way, for many of the crude conceptions we have of psychoanalysis. If Dr. Grinker has accomplished nothing more by his paper than to create interest in the subject of mental activities from a practical standpoint, he has done quite a bit for you.

I have heard Dr. Grinker and Dr. Kuh speak of psychoneuroses entirely, but the psychoses were not mentioned. It is in the treatment of the psychoses that psychoanalysis can be employed to greater advantage than in the psychoneuroses. Though hysteria is considered a typical psychoneurosis, it is to my mind nothing but a psychosis. I firmly adhere to Janet's theory of the mental basis of hysteria.

As to psychoanalysis, a given state of mind at any time is the end product of all that has gone before it, and consequently, if the psychoanalysis is to be a thorough one, it may take many months or years sometimes before we can complete it. Dr. Kuh has pointed out to you the basic requirement, namely, you must deal with an intelligent person. You can not employ psychoanalysis in the case of persons who have never consciously used their minds and do not know how to comply with the directions.

Some speak of psychoanalysis as suggestion. Suggestion is the uncritical acceptance of an idea and its realization in action. Suggestion plays only on the surface. Suggestion cannot reach the fundamental underlying conditions. The underlying conditions which produce the symptoms of a psychosis or psychoneurosis are the same conditions that make suggestion possible. An accepted suggestion then is quite as much a pathologic product as the various symptoms themselves.

Dr. Grinker continually refers to the conscious and unconscious activities without giving you an idea what constitutes consciousness. While we are acquainted with the activities and functions of consciousness in their different forms, we do not know what consciousness is. In the general evolution of the nervous system at some time or other consciousness makes its appearance. We must leave to the metaphysician the discussion of the true nature of consciousness. The field of full consciousness is a limited one.

Psychoanalysis as a therapeutic agent has its limitations. As to the method of procedure, you heard of the method of free association and word association. The method of word association is after all just a fishing expedition in the hope of catching something. The importance of the analysis of dreams has been pointed out to you. It is extremely difficult at times to locate the complex on account of the symbolic form in which it manifests itself. The personality and attitude of the physician play a certain rôle.

To understand the true meaning of psychoanalysis you want to have a certain conception of the psychosis. The psychosis, as far as the mental symptoms are concerned, is an expression of a conflict in the individual's mind between desire on one hand and attainment on the other. The psychosis is an expression of failure. Added to them are more or less well organized compensatory and defense mechanisms. Psychoanalysis as a therapeutic method is greatly limited at the best.

Dr. Grinker has mentioned to you Dr. Freud's laboratories for psychological research. I believe the greatest psychological laboratory is a deranged mind.

One word as to Freud's theory of sexual injury in hysteria. Freud wants us to understand that such injury usually takes place at a very early age of the patient. Freud cites cases where such injury has taken place at the age of four and a half years and one and a half years. To say that such injuries are the primary cause of a neurosis that develops at 20, is to put it mildly, stretching a point.

I want to conclude by stating this to you, gentlemen, that before any one of you laughs at Christian Science and the Emmanuel Movement, it behooves you to learn something about mental activities. I never conclude any discourse on any mental subject without saying a word to physicians as to the advisability of teaching this branch of medicine in medical schools. A patient comes to you because he is in pain, because he is worried about his condition, unhappy, and yet pain, worry and unhappiness are mental facts. What he really wants is peace of mind. You may laugh at Christian Science all you want, the fact

remains that many of your patients get there something that you do not understand to give them. At times the Catholic priest in his confessional unravels the troubled mind of the man who appears before him, and does more for him than you do.

Why not acquaint yourselves with what Christian Science teaches? How do they manage to build churches more rapidly in Chicago than you physicians can build hospitals? I wish simply to point out to you that while we have no dispute with medical schools that devote much time to the appendix and to the liver, it is about time that medical men early in their schooling be taught something about the mind and its activities.

Dr. Grinker (closing the discussion): There have been too many points brought out to answer them all, and as my time is very limited I shall be very brief. The objections brought forward by Dr. Kuh to-night do not appeal to me or to any one who is in a receptive mood for logical criticism, because he has only been throwing stones at things and has really not given the subject any very serious consideration. He reminds me of the man who walks down the street, sees a lot of people running after something, and he runs too—because some big men in Europe and elsewhere object to Freud's method. Dr. Kuh need not necessarily follow them. This is not the true scientific spirit. Because some one calls Freud names and Jones calls another man names, is no reason why we should condemn a movement by calling it names. That is not true science which is independent of personalities. Dr. Kuh has ventilated his grievances against Jones, which should not alter an iota of the value of the movement which the latter advocates. I have a different idea of these things. I want to study the subject as thoroughly as I can regardless of who else studies it. I want to master the method if I can, and the people who oppose Freud's methods must do likewise before they are entitled to a hearing. Dr. Kuh spoke of the frigid hysteric and also the sexually hyperexcited ones. He maintains that Freud contradicts himself in his statements with reference to them. I think he has not understood Freud, who states that most of the frigid hysterics have had abnormal sexual experiences or perversions early in life; that the sexual complexes have been repressed and have been converted into those of opposite tendencies. They are, in other words, only relatively frigid. We all know of the existence of relative frigidity. Who is there who has not treated a man or a woman said to be impotent, or thought to be so, and yet the patient has stated that he was potent with some individuals or in a certain environment—the frigidity or impotency was only relative. The hysteric, while frigid, is only relatively so. I believe an unmarried man should be careful on whom he practices psychoanalysis, for he may suddenly convert the relative impotency into an absolute potency with tender feelings for the "savior."

With reference to physicians being prudish, Dr. Kuh states that they are not. Show me a text-book written in the last twenty years that has many pages devoted to sexual perversion, which devotes any space to the subject of masturbation, a vice so universal that some frank statements are required before we learn its true significance on the health of the growing generation. Certainly the medical profession is prudish, always has been prudish, and Dr. Kuh, as a member of the profession, has demonstrated it to-night.

Dr. Davis criticized me for not mentioning a word on the psychoses and for not having discussed consciousness. I merely gave the A B C of Freud's principles and have superseded the time limit. Besides, what would there have been for Dr. Davis to discuss if I had taken up the definition of psychosis. Do not be misled by the gentlemen who have played with the subject. I think they know perhaps as little about it as I; at least from their discussion I cannot admit they know more, and I personally am intensely interested in the new psychotherapy and believe there is much good in it. It will take me two or three years more before I will know a great deal about it. The only way to learn is to go at it and study it. Freud's writings have been translated into good English by the *Journal of Nervous and Mental Diseases* Publishing Company. I am sure that after reading those books carefully, you will look on the entire subject from a broader view than those who discussed my paper.

TWO CASE REPORTS: MUSCULOSPIRAL PARALYSIS; SPINDLE-CELLED SARCOMA OF ARM *

EMANUEL FRIEND, M.D.
CHICAGO

CASE 1.—P. O'H., a boy aged 9 years, entered the Michael Reese Hospital June 5, 1911, giving a history of having met with an accident six to eight weeks previously when he fell off a fence, resulting in a fracture of his left elbow.

A cast was applied by a local physician (in St. Louis) and left on for one month. After the removal of the cast the forearm was found to be ankylosed, the position being an angle of about 20 degrees. Two weeks later the patient was operated on in St. Louis and a starch bandage applied.

On admission the physical examination revealed a deformity of left elbow, considerable callus and enlargement of the joint being evident. The radial reflex had disappeared. A typical wrist-drop was present.

Diagnosis.—Fracture of humerus just above the condyles; musculo-spiral nerve in bony callus.

Operation.—June 7, 1911, a 3-inch incision was made along the anterior aspect of the arm, just posterior to the biceps tendon. The musculo-spiral nerve was exposed above and carefully traced downward. The line of fracture was found to be about 1 cm. above the condyles of the humerus. At this point considerable callus formation was found with the nerve firmly impacted in the callus mass which was chiseled into and the nerve released, which showed a marked pressure atrophy. Next a portion of the fascia was dissected from the under surface of the external flap, and drawn under the now freed nerve and sutured to the opposite fascia and the wound closed. A metal splint was applied with the forearm at right angles to the arm, which was made possible by chiseling away obstructive redundant callus during the operation. Complete recovery ensued after three months' massage and electric treatments. Discharged June 26, 1911.

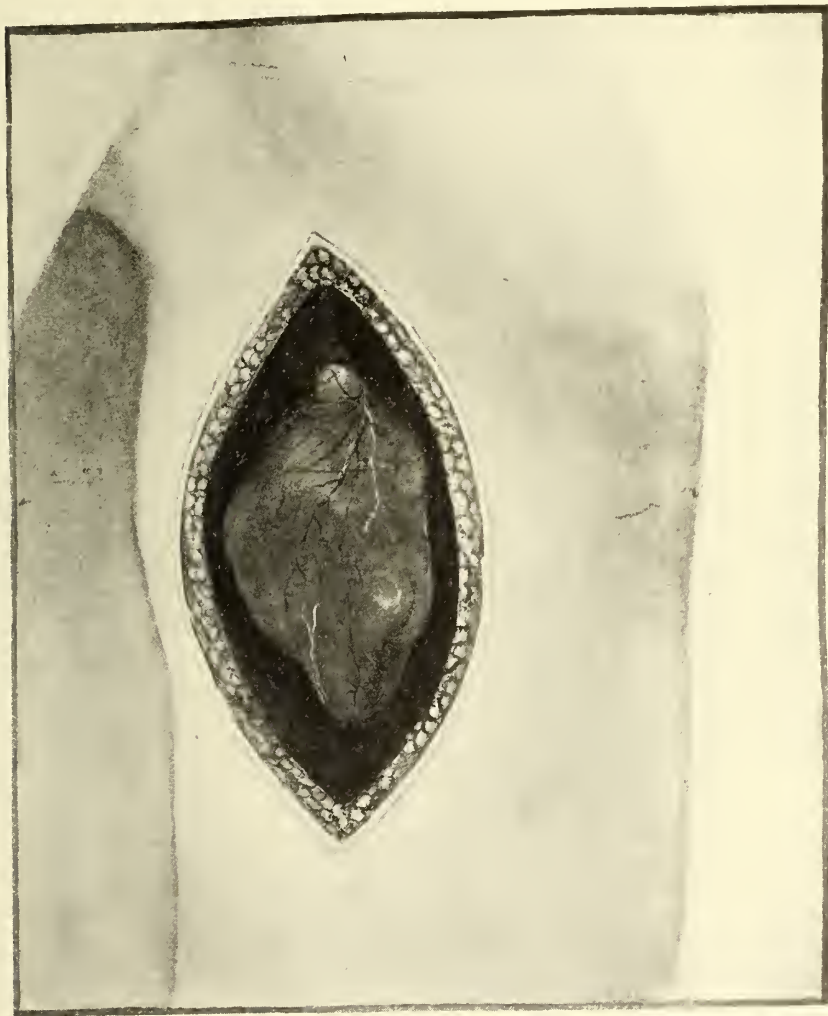
Treves, in his *Applied Anatomy*, page 227, states that the musculo-spiral nerve from its close contact with the bone, which it crosses at the level of the deltoid insertion, is frequently injured and torn. Thus it has been damaged in severe contusions, in kicks, in stabs, in bites from horses and very frequently in fractures of the humeral shaft, or the nerve may be sound at the time of fracture and subsequently so involved in callus formation as to lead to paralysis of the parts it supplies. In a case reported by Tilleaux, where paralysis followed some time after a fracture, the nerve was found embedded in callus and on cutting some of the redundant mass away a good recovery followed.

CASE 2.—J. A., aged 47 years, nationality Croatian, a laborer, was admitted to the Michael Reese Hospital, Nov. 9, 1911, and discharged Nov. 27, 1911.

* Read at a meeting of the South Side Branch, Chicago Medical Society, March 26, 1912.

Family History.—Father died of pneumonia at the age of 60 years; mother died at 50 years, cause unknown; one brother living and well; four sisters and one brother died in infancy.

Personal History.—Claims he had no diseases of childhood. At the age of 15 years he was operated on for left inguinal hernia. Had malaria twenty years ago. Had pneumonia nine years ago and another attack



two years later. Had been subject to bronchitis more or less for the last twenty years. One year ago had an attack of rheumatism which confined him to the hospital for three months.

Status Prasens.—Two and one-half years ago he noticed a swelling about the size of a bean on the inner side of the left arm gradually growing larger, but it did not inconvenience him until within the last four months, when it enlarged to the size of a goose egg and caused him severe pain at night, and loss of strength in the left hand.

Examination by both Dr. Renberg (who referred the case to me) and myself revealed the above-mentioned tumor developed in and beneath the biceps muscle with inability of the patient to completely flex the first three fingers of the left hand, as well as a general weakness in the flexor group of muscles of the arm and forearm.

Operation.—In cutting down on the tumor it was found to involve the middle third of the brachial artery, which with the utmost care could not be isolated from the mass and was resected for a distance of $1\frac{1}{2}$ inches. Collateral circulation was undoubtedly established as follows. After ligation of the brachial artery at the middle of the arm, the circulation is established by the anastomosis of the:

Superior profunda artery with the anastomotica magna, radial recurrent and the interosseous arteries.

Inferior profunda artery with the anastomotica magna, anterior recurrent and posterior ulnar recurrent arteries.

At the bend of the elbow:

The superior profunda and anastomotica magna arteries with the radial recurrent and interosseous arteries.

The inferior profunda and anastomotica magna arteries with the anterior ulnar recurrent and posterior ulnar recurrent arteries.

DISCUSSION

Dr. Julius Grinker: I believe musculo-spiral paralysis, like any other peripheral-nerve paralysis, is capable of regeneration, provided the ends of the nerve are properly brought together. In many instances, where operation is not performed, the ends seek each other in the course of time and there is partial or complete recovery.

This type of nerve paralysis constitutes one of the most favorable instances for recovery which we know. The results, as demonstrated here, are splendid and similar work should be encouraged, because it is not so difficult after all. Much more difficult is the correction of plexus paralyses, especially the obstetrical palsies. In these cases of plexus paralyses we are mostly in doubt whether the roots are intact or have been torn off so close to the cord that the ends may not be brought together. In such instances we are compelled to wait and often regeneration and union of nerve-ends will occur after electrical treatment, or even without it. I have in mind two cases of obstetric paralysis I am treating at the present time, in which the nerves, I believe, have been torn off close to the cord, and it would be inadvisable to go in and perform nerve-anastomosis. Both cases are improving. One is a dispensary case, and the other a private case. The time may come when this improvement will cease, and we may still be compelled to operate. I think the results in surgery of the nervous system which includes brain, spinal cord and nerve surgery, turn out in favor of peripheral nerve surgery while brain and cord surgery offers but few examples of complete cure.

Dr. Albert B. Yundelson: With reference to primary and secondary paralysis. I wish to say that in this case one might be led to think that paralysis followed the operation for the removal of the sarcomatous growth. If anyone of you will ask this man to squeeze your hand with his left hand you will find that there is no strength in it. Yet there is no anesthesia, no analgesia, no atrophy, no injury to any nerve at all perceptible. All the reflexes are normally present. The absence of any positive findings would, therefore, speak against the presence of paralysis. Still it is apparently impossible to bring out any strength in his grip. However, when I applied an electrode to his arm and told him to take hold of the other electrode and hold on to it, I found his grip so strong that I could not pull the electrode out of this hand although I had not as yet turned on the current. This was demonstrated very clearly to our students. There was no difficulty in making the diagnosis. There is no paralysis on flexion or extension anywhere. It is purely a functional condition.

Dr. Friend (closing the discussion): Regarding Dr. Grinker's remarks, so far as treating the nerve is concerned, it has occurred to me that if we allow a callus of that kind to cause a continued pressure atrophy of the axis cylinders in a nerve of that kind, we may have an irreparable pressure atrophy take place, although I believe in giving these cases plenty of time. The mere fact that this nerve was compressed to the size of a fairly good sized thread is sufficient, it seems to me, to justify the procedure of releasing the nerve.

Now, what the ultimate outcome would have been is merely problematical if he had not been operated on. But I think with our asepsis of to-day and our methods of operating, this is not such a serious operation to cut down and free a nerve of that kind.

ORTHOSTATIC ALBUMINURIA*

EVERETT J. BROWN, M.D.

DECATUR, ILL.

According to Dieulafoy, Richard Bright himself was one of the first men to make a mistake in the diagnosis of Bright's disease; a medical student examined by him showed albuminuria, and an early death was predicted; the albumin continued in the urine for forty-three years, but Bright's disease never developed. Any physician of experience can relate numerous cases of similar character, where the continued good health of a supposed chronic nephritic has added much to the chagrin and less to the reputation of the physician.

Fourteen years ago I was called to see a young physician in a neighboring town; at that time his age was 21 years, and he complained of anemia, loss of weight, syncopal attacks, persistent albuminuria with hyalin casts; specific gravity 1.020; his weight was 135 pounds; there was a mitral murmur and an accented second sound. A diagnosis of nephritis was made and he was dieted for two years. Finally while studying in Europe he gave up his strict diet and ate everything. The albumin lasted two and a half years, but he gradually improved, gaining 35 pounds in weight, and is now actively engaged in practice; his urine is always free from albumin and casts, and his blood-pressure is 135 mm.

We are all agreed that albuminuria is no longer synonymous with Bright's disease; although we are not justified in calling any albuminuria physiologic, yet we know that many are functional and probably often harmless.

Orthostatic albuminuria, as the name implies, is a form of albuminuria which occurs while the patient is in the upright position and which disappears when the recumbent posture is assumed; thus the morning urine immediately after arising is free from albumin, but the latter quickly appears on assuming the erect position, even if no exercise is taken, and disappears when the patient lies down. This is a much more common disease than is usually supposed as evidenced by the rapid increase of literature on the subject, and any physician who makes routine examinations of all children or young adults presenting themselves will soon encounter this most interesting condition. Pavy described

* Read at the Sixty-Second Annual Meeting of the Illinois Medical Society, at Springfield, May 21-23, 1912.

this form of albuminuria many years ago under the name of "cyclic" or "physiologic" albuminuria. He noticed the intermittence and periodicity of the albuminous urine; the night urine would be free from albumin while that secreted during the day invariably showed, at one time or another, albumin in considerable amounts; the albumin would quickly disappear if the patient would lie down. Other names applied to the condition are "functional albuminuria," "albuminuria of adolescence" and "postural albuminuria." The name now generally adopted — "orthostatic albuminuria" — was proposed by Teissier thirteen years ago. It occurs mostly in young people, young adults and children; it is supposed to be due to a splanchnic vasomotor paralysis causing a hypotension of the abdominal circulation; most of the patients are slim, tall and round-shouldered, hence it is sometimes called "lordotic" albuminuria; many show relaxed abdominal walls with general spianchnoptosis; many patients show a movable or displaced kidney, and some clinicians regard this as the cause of these cases.

The patients are usually brought to us complaining of very indefinite symptoms such as anemia, weakness, loss of appetite, indigestion, coated, flabby tongue; tachycardia occurs in a fair proportion of cases; one patient had habit spasm of orbital muscles, another a general turunculosiis; quite a number show adenoids and enlarged tonsils. The urine on arising shows no albumin, but this is present usually at other times; the heat and acid test always detects the albumin, but Heller's test is very often negative; the acetic acid reaction for euglobulin is always present and is important in diagnosis as distinguishing this albuminuria from that of nephritis; specific gravity is variable, often about 1.020, occasionally low, but never uniformly low; hyalin casts are occasionally found; blood-pressure is low or normal and has a tendency to increase in changing from the standing to the lying position. This disease is of especial importance in its relationship to life insurance, for some companies still condemn all applicants with albuminuria as undesirable risks. This is unjust to many applicants, for the albuminuria is not only often harmless, but is often curable. Unfortunately many cases of orthostatic albuminuria are diagnosed as nephritis and subjected to wrong treatment and to wrong diet methods, for a proteid diet does these cases no harm, but on the contrary is necessary in the best treatment of the condition.

I have met three cases of orthostatic albuminuria in my life insurance work; all were rejected or postponed. A. R., a young man aged 24 years, bookkeeper, quite tall, apparently in perfect health; blood-pressure 110 mm.; the 11 a. m. urine shows fair amount of albumin by the heat and acid test and Heller's test, and the acetic acid test shows nucleo-albumin: amount of albumin is 2 per cent. by the Purdy centrifuge method: specific gravity 1.020. Next morning on arising the specific gravity was 1.015, but no albumin by any test; sixteen tests of his urine were made, and at all hours of the day; the three specimens on rising never contained any form of albumin, but after he came to work every specimen showed from a trace to 2 per cent. albumin, and always nucleo-albumin or euglobulin.

The second case showed albumin in our office one day and the next day none, even during his working hours. The third case, a drug clerk, aged 20 years, showed a normal blood-pressure, no albumin on arising, none at 8 p. m., but plenty during the day; no casts.

The medical director of one life insurance company has made an exhaustive study of this form of albuminuria and now accepts these cases if they are free from other defects. Right here I wish to say a few words about the ordinary tests for albumin, especially in its relationship to life insurance. That the Heller or cold nitric acid contact test is unreliable for both clinical and life insurance work I have long been convinced; it is a coarse test and fails to show albumin many times when it exists; any test which "requires several minutes to show the white ring" or which shows it "only when considerable quantities of albumin are present" cannot be depended on; that the white ring gets more prominent on standing is an error which has been carried down from one text-book to another; the white ring is seen best immediately on contact and rapidly becomes less distinct as the acid and urine slowly mix with each other; we have demonstrated in numerous instances the presence of albumin by the heat and acid and other tests when it could not be found by Heller's test. A man aged 40 years, of most robust appearance, applied for life insurance; blood pressure was 240 mm. by the Stanton instrument; Heller's test negative; heat and acid test shows faint trace of albumin; specific gravity 1.018; diagnosis, interstitial nephritis. This man would successfully pass in any company which did not require blood-pressure estimations and accepted Heller's test for albumin. After twenty-three years' experience in life insurance work I have come to the conclusion that many albuminurias rejected by insurance companies are good risks, and on the contrary that many cases of dangerous Bright's disease, usually in the form of interstitial nephritis, are accepted for the reason that blood-pressure estimations have not been taken and the small amount of albumin has not been detected because of the use of Heller's test. Of twelve old line life insurance companies, eight accept Heller's test; two require both Heller's and the heat and acid test, one accepts Heller's test, but prefers the heat and acid and one "places little reliance on Heller's test."

Blood-pressure machines have done more to set us right in the diagnosis of renal and cardiac diseases than any other instruments of precision invented in the last 200 years; as Cabot says: "If he were allowed to have only two instruments for aid in diagnosis he would select the stethoscope and the blood-pressure apparatus, and the latter is of more importance than the examination of the urine in chronic kidney trouble, for examination of the urine has again and again led him astray, but the measurement of the blood-pressure almost never."

The medical profession has been very slow in recognizing the clinical significance of the various forms of non-nephritic albuminuria; many of these cases are not discovered because of the failure of many physicians to examine the urine in patients who are usually only slightly ill, or if

albumin is found they jump at the conclusion that the patient has nephritis: in addition to orthostatic albuminuria, Elliott has called attention to a "simple continuous albuminuria" which may exist for years, even into adult life; the albumin is found at any and all times, regardless of posture or exercise, there are no casts in the urine and no cardiovascular changes and the blood-pressure is normal, and a third form which is called "residual albuminuria" following an acute nephritis in childhood, but persisting sometimes for years without a true chronic nephritis developing.

In the various so-called functional albuminurias, in addition to the serum albumin there is found another proteid body which has been variously called nucleo-albumin, proteid albumin, globulin, mucin and euglobulin. The detection of this form of albumin is of great importance both for diagnosis and prognosis, for it is rarely found in true nephritis and the more pronounced the reaction, the better is the prognosis. This proteid is precipitated along with the serum albumin by the ordinary tests, but it can be precipitated alone by the test known as the cold acetic acid test; in making this test I use two test-tubes, one being for control. In each tube is placed 1 part of the urine to 5 or 6 parts of distilled water: to one of them is then added 30 to 40 drops of acetic acid which rapidly diffuses itself and causes a distinct haziness, which gradually increases if euglobulin is present; by then holding the two test-tubes side by side the contrast is marked. If euglobulin is found in the urine during waking hours but is absent on arising or after lying down for a while, if the specific gravity is normal or higher, if there is absence of casts and nocturia, and if the cardiovascular system is normal and the systolic blood-pressure not elevated, a diagnosis of orthostatic albuminuria may be made. Several investigators have called attention to the inverted blood-pressure record; normally the record is higher while upright and lower when lying, but with this disease the reverse occurs. This phenomenon I have been able to confirm in a number of cases.

Albuminuria as a single symptom has very unimportant and uncertain prognostic import. When albumin is found in the urine we must remember that there is only one chance in eight that the patient has Bright's disease; if we find both albumin and casts, there is yet only one chance in two that true nephritis exists, for in 1,014 albuminous urines examined by Hastings and Hoobler only 125 could be clinically diagnosed as nephritis, and in urines containing both albumin and casts only 474 of the 1,014 cases proved to be true nephritis; therefore the test-tube and the microscope alone will not make the diagnosis for us, but further evidence must be sought in the cardiovascular system, the blood-pressure, the retina and in the measurement of the quantity and the specific gravity of the urine. We should be very slow in making a diagnosis of Bright's disease and it is often impossible to do so without a more or less prolonged observation of the patient, for with most people a diagnosis of Bright's disease is a sentence of death; and then again even in patients where there is no doubt as to the existence of a chronic nephritis the case may

prove to be one of those not uncommon cases of non-progressive chronic nephritis which remain at a standstill for years. Some one has said that it takes a week to make a thorough examination of a patient; this is especially true in kidney diseases.

Although orthostatic albuminuria is more common in boys and girls, yet it often continues into the adult state. The idea that it finally always culminates in Bright's disease or even predisposes to that disease we now know to be wrong by the late histories of many cases. That it is an evidence of a lowered vitality due to a faulty metabolism producing a chronic toxemia with vasomotor relaxation there is hardly a doubt, for people with this condition show a diminished resistance to other diseases, but our experience tells us that a large number of these cases get entirely well.

A young man aged 21 years, in apparent good health, was examined by me for life insurance at 10 o'clock one morning; the examination showed nothing abnormal excepting the single symptom of albumin; the specific gravity was 1.021; nucleo-albumin as well as serum albumin was present; an inversed blood-pressure was found; the reading was 113 mm. while lying and 108 while sitting; the morning urine was always free from albumin; I made a great many tests of his urine at all hours of the day, as shown by the chart. He was rejected by the company this time and again three months later, as albumin persisted; he has since been accepted by another company, as the enterprising agent had him examined by the company's physician at 7 a. m.

The treatment of orthostatic albuminuria resolves itself into the treatment of a lowered vitality and a vasomotor hypotonus; fresh air, moderate exercise, a full diet with plenty of proteids. As many patients are tall and lordotic with more or less general splanchnoptosis, exercises which develop the trunk and abdominal muscles are valuable; it is certainly not necessary to put these patients to bed on a non-meat diet. Ross and Wright, assuming that some coagulation defect exists in the blood, report the cure of some patients from the administration of calcium salts, especially the calcium lactate; and they state that the administration of calcium lactate serves to differentiate renal from non-renal albuminuria, the excretion of albumin in the former not being affected.

CONCLUSIONS

A large number of the albuminurias of childhood and young adult life are harmless and can be given a good prognosis.

Never condemn a patient to the horrible regimen, either dietary or hygienic, of Bright's disease simply because he has an albuminuria.

The morning urine of all albuminurics should be tested, especially if there is no high blood-pressure or other cardiovascular signs.

Heller's test for albumin should be discarded as it often fails to show albumin in the most dangerous forms of nephritis.

THE STEEL SPLINT IN TREATMENT OF FRACTURES *

O. L. PELTON, JR., M.D.

ELGIN, ILL.

Mr. President and Members of the Elgin Physicians' Club: In 1894, after two or three years of experimental and clinical work, Mr. Arbuthnot Lane first presented to the medical profession as a whole the open method in the treatment of fractures. However, it has only been in the past seven or eight years that the more progressive American surgeons have been willing to treat simple fractures by the open method. For a number of years various forms of suture material were used but more than all others various forms of wire. Wire, principally because it does not support or strengthen and because it bends and sometimes tears from the bone, thereby not holding the broken ends of the bone in apposition, has given way in most instances to the steel splint or Lane's plate.

It is the purpose of this paper after a rather hasty review of the literature to briefly discuss here a few of the essential points in the use of the steel splint.

Providing that the general condition of the patient will allow of operative interference and that you have the patient in a hospital where the greatest antisepsis and asepsis may be practiced, the indications for the use of the steel splint are three, namely, first, fractures where we have non-union or mal-union. Second, cases in which either with or without general anesthesia the fracture cannot be reduced, or where it is impossible after reduction to hold the broken fragments in apposition. We may consider that we have attained proper reduction when the broken ends are in at least partial apposition and the shortening is not more than a quarter of an inch (Martin). Third, in cases of fracture of the forearm where the fragments in these parallel bones seem to approximate each other it is often best to treat these fractures by the open method and thus preserve rotation.

When possible two *x-ray* plates should be taken of all fractures, the second at right angles to the first. Let me caution you here not to rely entirely on the *x-ray* plates, however, especially where we have transverse fractures in the shaft of the long bones, for in these cases there may be rotation which will not be shown in the *x-ray* plates.

There has been as much discussion regarding the best time of operation as there was in days gone by regarding the best time of operation in cases of acute appendicitis. There are advantages and disadvantages on both sides and really narrow down to the condition of the patient and the conditions surrounding the patient; and of course the surgeon must in all cases exercise his judgment as in any other operative work. Lane operates on all cases immediately following the fracture, if they come under his care at once. However, it must be remembered at this time the resistance of the tissues is lowered as a result of the trauma, and thereby an amount of accidental infection would prove more serious than

* Read before the Elgin Physicians' Club, Feb. 5, 1912.

during the course of an ordinary operation. But as Lane points out, it is easier to reduce the fracture at this time especially in comminuted fractures where the surrounding soft tissues lie between the fragments. If, on the other hand, we are to postpone the operation, we must wait until at least the beginning of the second week or until the traumatized tissues have again gained their resistance, at which time most of the extravasated blood will have been absorbed, the lymphatic system will be again in good working order and the broken ends of the bone will have passed through that stage preparatory to repair. Koenig advises operating at this time because as he says the process of callus formation has well started and therefore he thinks he attains better results. Lane, on the other hand, thinks the bone should unite with practically no callus.

As I have said before, greater care must be given antiseptics and asepsis than in any other operation, and plenty of time should be given to the preparation of the skin. The incision should be rather too long than too short and the site of the incision should be where it will do the least harm to the muscles and tendon, blood-vessels and nerves surrounding the fracture. There is less risk along this line in the operation on the leg than in operation on the arm, where every precaution must be taken and we must pay particular attention to the musculospiral nerve. The edge of the wound should be covered by sponges or towels. Lane uses long forceps for hemostasis that will drop away from the wound and that will also crush the entire lumen of the vessels, thereby doing away with the necessity of getting the hands into the wound to tie these vessels in most instances. Koenig's rule on this point is a good one: "Never touch the wound with the bare hand, but make all necessary manipulations with instruments." The periosteum should be protected and all saved that is possible. It should not be stripped from the bone. Koenig advises against too thorough cleansing of the broken ends because he believes Nature will attend to what material is there and that this material will aid in callus formation. He thinks that only those parts should be removed from between the fragments which are liable to interfere with proper union.

Aside from the plates and screws a person should have the proper clamps to hold the plates and broken ends of the bone in position. A bone drill that will drill a hole a trifle larger than the core of the screw should be used. A screw holder is not only a great time saver but saves the patience of the operator. A screw driver is also needed. The Lane plates commonly purchased on the market are made of fine-grained, cold-rolled, blue steel and are stamped out. Surgeons point out the difference in strength in these plates and advise that each one be tested before it is used. Martin uses a plate made of vanadium steel and reinforced at the screw holes, for he claims that it is at this point a plate is most liable to break. The screws also vary somewhat in pitch, and a goodly supply should be on hand so that if the first one tried does not drive home easily another may be used. The thread of the screw runs nearly to its head, the purpose being that it should hold firmly in the outer or firmest layer

of bone. In dealing with fractures of the shaft of the long bones failure has more often been due to selecting a plate too short rather than too long. The screw should be set as near to break as possible, thereby making less leverage. However, it should not be placed nearer than a quarter of an inch. If you are dealing with bone of normal strength and firmness two screws on each end of the plate will generally be sufficient. The plate should be made absolutely immovable at the time of the operation for by so doing there is less likelihood of its having to be removed at a later date. It is the rule that if the wound remains clean the screws will hold for an indefinite length of time and if the plate should have to be removed for any cause the screws have to be unscrewed as they were put in. There are exceptions to this rule, however, and Martin reports a case of a fracture where an *x*-ray was taken more than a year after an operation and where recovery was complete and function perfect; the screws in this case were seen to be clumped together at the lower end of the plate. In closing the wound all bleeding points should be secured and no dead spaces left where serum or clots might collect. It is a safe rule to follow to place a small piece of gutta serena tissue, rolled up, into the lower end of the wound for twenty-four to forty-eight hours. The larger the amount of soft tissue under which the plate is buried the greater is the danger of infection. The nearer the plate is to the surface the more likelihood that it may have to be removed.

Because of the contraction of the muscles and consequent overriding of the fragments it is often difficult to bring the ends of the bone in apposition. This is especially true in fractures of the femur. To overcome this a strip of canvas should be passed over the end of the bone and brought down as nearly parallel to the leg as possible and attached to a pulley in a manner similar to Buck's extension. A 25-pound weight should be applied and 25 pounds added every five minutes until 100 have been added. The traction should be kept up until there is a lengthening of a quarter of an inch. A hundred pounds is usually sufficient, but if it is not more should be added. During the traction the bone should be prevented from angling by a lateral pressure. If this traction fails to correct the overriding the limb should be placed across the arm of a strong assistant who should be directed to make lateral traction until the angling is sufficient to bring the edges of the broken fragments together. When this is done it is often possible to force the bone back into apposition. In cases of long standing especially of ununited fractures where overriding has lasted for a long time Beckman advises extension for several days prior to the operation.

Infection occurs in quite a number of cases but it is often not of a serious enough nature to prevent union. In fact, many cases have been reported where there was infection, but where the plates held long enough to insure permanent union.

After completing the operation a plaster cast or anterior and posterior molded plaster-of-Paris splints should be applied. If you apply a circular cast it is best to make it so that you will immobilize the nearest joint

on each side of the fracture, and before the cast has dried to open it on each side so that the top may be lifted off as a shell.

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PROFUSE HEMORRHAGES FROM THE URINARY TRACT *

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It is not my object to consider in a routine manner all of the etiologic factors that may produce blood in the urine. I shall rather limit myself to a consideration of profuse, painless hemorrhages from the urinary tract, with especial reference to the value of cystoscopy in diagnosis of the source of the blood, and a consideration of the underlying pathology, and to cite a few examples of the more frequently occurring causes of this type of urinary hemorrhage as met with in practice. Inasmuch as this paper shall deal only with voluminous hemorrhages, I shall pass over the various chemical tests as well as the microscopic characteristics of the blood in the urine.

Hematuria always means some pathologic process in the urinary tract and must be looked on as a signal of danger. It is never to be looked on lightly, as is so frequently done. A patient should never be told that "this is nothing serious and everything will be all right in a few days." Equally fallacious is the irrigation of the bladder or instillations into it of various drugs, without having first determined the origin of the bleeding. It is quite obvious that such a line of treatment is nothing short of robbing a patient of valuable time by a delay of proper treatment, should he be suffering, for example, from a tumor of the kidney or a renal tuberculosis.

In other words, the question of painless hematuria is one primarily of diagnosis, determining first the origin of the blood, and secondly, determining, if possible, the cause of the bleeding. By cystoscopy, ureteral catheterization and endoscopy, one can definitely determine the origin of the blood, whether renal, ureteral, vesical, prostatic or urethral in origin.

The entire subject of painless hematuria has undergone a remarkable change since the introduction of the cystoscope. Before the advent of cystoscopy most elaborate tables of differential diagnosis were found in text-books, in which various subjective symptoms and physical appearances of the urine were set down as being pathognomonic of renal or vesical hemorrhages.

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While at the present time painless urinary hemorrhage which does not promptly yield to treatment is looked on as a symptom of serious moment, in former times not so much stress was attached thereto. Thus, Meinhofer, in writing on this subject in 1810, assumes, in conformity with the views of his times, that many a renal hematuria which occurs periodically and without pain is harmless and when occurring in plethoric persons, may even be beneficial.

Cases of painless hematuria cannot be properly diagnosed without a cystoscopic examination. While a cystoscopic examination is of intrinsic value in every case of hematuria, a "tentative" diagnosis may perhaps be made without its aid in cases associated with pain, typical attacks of renal colic, or symptoms referable to disturbances in the urinary tract. the final diagnosis must be made from the cystoscopic findings.

There can be no excuse for performing an exploratory operation on the urinary bladder, to find a normal bladder and the blood coming from the kidney of one, or perhaps both sides.

To illustrate the types or examples of the obscure and difficult to diagnose conditions, I have selected from a large number of hematuria cases those in which the hematuria was the only or the predominating symptom.

It is almost needless to mention that a good, careful history be elicited, and a physical examination be made, including a rectal examination and a vaginal examination, before the cystoscopic examination is made, for there we may be able to elicit information which may be of aid in making a diagnosis. Thus, for example, a history of trauma of the kidney area, a history of previous urinary hemorrhage, and in women often a statement is obtained of hematuria occurring with each pregnancy. Not only should each cystoscopic examination be preceded by the above-mentioned examinations, but a careful and complete chemical and bacteriologic examination of the urine should precede.

It has been repeatedly demonstrated that infections of the urinary tract by *Bacillus coli communis* are often associated with painless hematuria. It is of some moment, therefore, that cultures from all obscure cases of renal hematuria be made from urine obtained directly from the kidneys by means of the ureteral catheter.

This raises the question of how many of the cases of so-called essential hematuria, as reported by the older writers, were in reality due to colon bacillus infections. Nor must sight be lost of the fact that many of the so-called cases of "essential hematuria" are due to inflammatory changes in the kidneys.

After having obtained as much information as possible from the history, physical examination and urinary report, we are then ready to proceed with the cystoscopic examination, either alone, or combined with ureteral catheterization.

Of what aid is the cystoscope in making a diagnosis and how much information is obtained by its use in cases of painless urinary hemorrhage. This to a certain extent will depend on the individual case. Cystoscopy reveals the condition of the bladder, whether normal, or

whether there are any pathologic lesions present which may be the cause of the bleeding. Examples of the more frequent causes of painless hematuria of vesical origin will be mentioned below.

If in a given case the bladder is normal, one then proceeds to an examination of the ureteral orifices. These are often normal. If the cystoscopic examination is being made during the course of the bleeding and if the hemorrhage is renal in origin, it is then possible to see from which ureteral orifice the blood is being emitted.

There may be certain conditions present under which one is not able to obtain the desired information by cystoscopy. These I have divided into two groups:

1. In cases of renal hematuria which are examined in the free interval, that is, at a time when the bleeding has stopped. In view of the fact that these cases, as a rule, do not produce changes in the ureteral orifices, such as are seen in cases of tuberculosis of the kidney or in cases after the passage of ureteral calculi, it is, therefore, often impossible to state from which side the bleeding comes. Because of this fact all cases of renal hematuria should be cystoscoped during a time when they are actively bleeding. If the bleeding has continued for a long time or is associated with the passage of clots, there may be a difference cystoscopically in the appearance of the two ureteral orifices, so that even though there is no bleeding at the time of cystoscopy one could make a probable diagnosis in favor of the kidney whose ureter shows deviations from the normal.

2. The other condition under which it may be difficult, or even at times impossible, to determine the origin of the bleeding is in large vesical hemorrhage, due to either very large or profusely bleeding neoplasms. It may become necessary in these cases in which the hemorrhage comes from the bladder, and where it is impossible to have the wash water return clear, to treat these patients, directing the treatment toward the control of the hemorrhage. For this purpose rest in bed, with the use of an ice bag over the bladder, are resorted to, aided by the internal administration of styptics. Locally, instillations of adrenalin and antipyrin are of value in controlling the hemorrhage.

While this general plan has given satisfactory results in most cases, not every case responds to treatment, and in spite of everything that can be done, the bleeding persists so that it may occasionally happen that a case will have to be operated on (where there may be danger of exsanguination) without a cystoscopic examination having previously been made.

In all my cystoscopic work this has occurred to me only once, and that in the following case, previously reported:

CASE 1.—The patient, a male, aged 64 years, complained of profuse hematuria of three weeks' duration. Local and general treatment without any appreciable effect on the bleeding. It was impossible to remove the blood clots from the bladder so that a clear medium could not be obtained, thereby rendering cystoscopy impossible. Suprapubic cystotomy revealed the following: The bladder was distended, reaching almost to the umbilicus, being filled with a large amount of blood clots and urine. After the cavity of the bladder was cleaned and all the

clots were removed, a median lobe enlargement of the prostate was seen projecting into the bladder. It had the general contour of a small uterus. Running across the top of this lobe were seen four or five dilated, tortuous, atheromatous vessels about the diameter of a large knitting needle. The blood was seen oozing from several of these small vessels which had ruptured in some unexplainable way.

The following cases have been selected from a large number of cases of hematuria in which the bleeding was the only symptom or the predominating symptom for which the patient sought relief:

CASE 2.—Mr. A. Referred by Dr. J. B. Herrick. About three years ago the patient had his first attack of hematuria, which lasted for only twenty-four hours. He attributed this bleeding to heavy work that he had been doing, namely, lifting up fence posts. Since that time, at irregular intervals, he has had blood in the urine, which lasted only for a day or two, followed by a free interval during which the urine would be perfectly clear. For the past three months his hematuria has been constant, varying in amount, but at no time has the urine been free from blood. The present attack is the longest in duration that he has had. He complains of pain in the descending ramus of the os pubis. There is no frequency of urination. The urinary examination: bloody, acid, 1,024 albumin +; microscopic examination: many well-preserved red blood-corpuseles, no pus cells, no casts, no crystals. On the right side of the bladder a tumor mass was seen extending from behind the internal ureteral orifice. The tumor is well pedunculated and covers the area in which one would expect to find the right ureteral orifice. Several dark areas are seen in the tumor, evidently hemorrhagic. Small villi may be seen floating in the boric solution which was used to distend the bladder. Hanging from the top of the internal urethral orifice, another small tumor mass, consisting of villi, may be seen. The left ureteral orifice is normal. No cystitis. Diagnosis: Papilloma of the bladder.

CASE 3.—Mr. U. Referred by Dr. J. B. Herrick. The chief symptom was the presence of a persistent hematuria. This was rather profuse, lasting as long as seven or eight days. During the free interval the urine was perfectly clear. There were no urinary symptoms, no pain, no frequency of urination. He has had one attack of pain in the region of the left kidney but this was not very severe and was present only once. Rectal examination: slight enlargement of both lobes of the prostate. The urinary examination was negative except for the presence of large amounts of red blood-corpuseles. First cystoscopic examination: the bladder was negative; no stone, no tumor, no cystitis. At the internal urethral orifice two small prostatic lobes were seen projecting into the bladder. No visible bleeding points, the urine being emitted perfectly clear from both of the ureters. Second cystoscopic examination: the same result as at first with the exception that the base of the bladder was slightly edematous. Third cystoscopic examination: carried out about two weeks after the second and made immediately after another attack of hematuria, showed the left ureteral orifice dilated and a few blood-vessels around it well injected, although at this time the urine coming from the left ureteral orifice was perfectly clear. In view of the fact that the bladder was negative and the right ureteral orifice was normal, and considering the findings as just enumerated relating to the left ureteral orifice, a diagnosis of hemorrhage from the left kidney was made. The physical examination was negative. The patient was a very stout man with a well-marked panniculus, so that palpation of both kidney areas was negative. The patient was operated on by Dr. Bevan who did a nephrectomy. This revealed a primary carcinoma of the pelvis of the left kidney.

This case illustrates what was previously said in regard to the difficulty at times met with in cases of renal hemorrhage when the patient is examined in the free interval, that is, when the patient is not bleeding. The first and second cystoscopic examinations were negative and gave no

clue as to the probable source of the blood. It was not until he had had a third, rather sharp attack of hematuria, resulting in some slight changes in the left ureteral orifice, described above, that a diagnosis of left-sided renal hemorrhage was made which was verified by the operation.

CASE 4.—Mr. O. B. Referred by Dr. Ruthenberg. First attack of hematuria occurred about eight years ago. This was of about a week's duration, absolutely without pain. At this time he passed some clots, not very many, but still enough to plug the urethra. During the following year he had a little bleeding off and on. After this he was free for about a year, when suddenly, after working very hard, he had another profuse hemorrhage. Since this time he has had hemorrhages at irregular intervals. Between the hemorrhages his urine was perfectly clear and he cannot see any blood in it at all, as the patient has purposely collected his urine in glass receptacles and allowed it to stand for twenty-four to forty-eight hours, in order to inspect the sediment. The patient thinks that the attacks of bleeding are becoming more and more frequent, and he says the condition of clear urine rarely lasts longer than six or eight weeks at the present time. There are no urinary symptoms, no pain, other than that caused by a clot lodging in the urethra. He also complains of a great many neurotic symptoms. There can hardly be any connection between his painless hematuria and these symptoms. He complains of a feeling of tenseness in the throat and neck and in the back between the scapulæ, along the supraspinatus fossa and the cervical vertebrae. This is usually accompanied by headache. These attacks occur in the free interval. When an attack is beginning to make itself manifest, and if a hemorrhage should start, the latter immediately relieves the headache and feeling of tenseness, so that the patient thinks there is a direct connection between these symptoms and the bleeding. Physical examination, *x-ray* examination and rectal examination were negative. Urine, blood red, albumin +, no sugar, many red blood-corpuscles, no casts, few leukocytes. Cystoscopically, a papilloma of the bladder, situated on the right side, behind the right ureteral orifice and slightly internal to it. This is the size of the thumb and presents the usual villous structure seen in papillomata.

CASE 5.—Mr. G. S., aged 26 years. Present illness began about four months ago at which time patient first noticed that his urine was bloody. It has been bloody more or less ever since. Patient stated that sometimes his urine was perfectly clear. When the hematuria first began it was absolutely painless. He has never had any pain other than that associated with the passage of a large amount of clots. The only abnormal sensation complained of was a burning sensation in the urethra, at the end of urination. This symptom was present only at times, and at other times the urination is without any pain and there is no frequency. Cystoscopic examination in the region of the left ureteral orifice: there were seen many superficial ulcers, as well as a well-marked degree of cystitis. The left ureteral orifice is wide and gaping. The mucosa immediately surrounding the left ureteral orifice is edematous and in one place a distinct vesicle with a fairly well developed pedicle is to be seen. The right ureteral orifice is normal. Mild degrees of generalized cystitis, and around the left ureteral orifice a few nodules or tubercles were seen. Double ureteral catheterization: the urine obtained from the right ureteral catheter is negative, that from the left contains pus in large amount, red blood-corpuscles, and from this urine tubercle bacilli, almost in pure culture, were obtained. Diagnosis: Tuberculosis of the kidney with secondary or descending tuberculosis of the bladder.

CASE 6.—Miss L. T., aged 24 years. Six or seven months ago the patient first noticed that her urine was bloody. The primary attack of hematuria persisted for about eight weeks, being worse at some times than at others. Since this very severe and sharp attack of hematuria the urine has been bloody at times for a few days and then again it would be quite clear. The patient has never passed any clotted blood. Never passed any calculi. No frequency of urination. While the patient sought relief primarily from the hematuria, which has alarmed her and the members of her family, it was brought out in

the history that two months after the onset of her present trouble she had a very mild backache. This, at times, had been fairly severe, so that she would see a doctor about it. At present this pain has completely disappeared. Appetite good; bowels regular. Physical examination negative. Cystoscopic examination: bladder negative, no stone, no tumor, no cystitis. Both ureteral orifices negative and normal. Double ureteral catheterization: on the right side the catheter passes up into the pelvis without encountering any obstruction; the urine from the right side shows a few epithelial cells, leukocytes and red blood-corpuscles. The ureteral catheter on the left side meets an apparent obstruction 10 cm. from the left ureteral orifice. It was therefore decided to catheterize the patient with a shadowgraph catheter and take an x-ray picture. The catheter easily passes the previously found apparent obstruction and is passed without any difficulty into the pelvis of the left kidney. With the shadowgraph catheter in place the patient was x-rayed by Dr. Potter, with the resulting findings: The ureteral catheter passes across the pelvis, upward, running across the sacro-iliac synchondrosis, passing parallel with the spine. When it reaches the height of the second lumbar vertebra, the catheter bends around and then passes downward. This abnormal course pursued by the ureteral catheter may mean either one of two things: either that we have an enlarged pelvis, or that we are dealing with a movable kidney. As is well known, movable kidneys not infrequently produce voluminous hematurias. Whether this can be considered as the explanation of this hematuria still remains an open question.

CASE 7.—Mr. C., aged 62 years, referred by Dr. George Edwin Baxter. The patient first consulted Dr. Baxter about eight weeks ago, complaining of headache and dizziness. At this time Dr. Baxter found albumin and casts in the urine. Four weeks later the patient had his first attack of hematuria, which was absolutely painless and lasted for about a week, at the end of which time the urine cleared completely, although microscopically a few red blood-corpuscles were always found in the urine. Since this occurred, four or five weeks ago, the patient has had many attacks of hematuria, varying in amount and duration. The patient states that sometimes he feels better after the bleeding—to use his own expression, "just as a man feels after a boil has been opened." There has been no painful urination, nor any frequency, with the exception that for the past six months he has been getting up more frequently than before that time, about once or possibly twice during the night. Cystoscopically; internal urethral orifice negative, both ureteral orifices negative, a large tumor, the size of a small pigeon's egg, in the right side of the bladder. Rectal examination: prostate negative, a hard mass—of a stony hardness—can be felt involving the region of the seminal vesicle, extending from the lateral border of the prostate to the bony pelvic wall. Diagnosis: Primary carcinoma of the bladder involving the pelvis and right seminal vesicle.

CASE 8.—Mrs. H., aged 49 years, referred by Dr. F. D. Francis. For the past ten months the patient has noticed that her urine was bloody. She stated that prior to the onset of the hematuria she had noticed a "gathering" in her side, which was associated with a small amount of pain. Since the onset of her present trouble ten months ago the urine has never been free from blood. There has been no pain or burning on urination nor other abnormality of micturition. For the past two weeks there has been a slight increase in frequency of urination, so that she urinates five times during the day and once at night. Patient thinks she has lost about 40 pounds in weight. Physical examination: Patient is very pale, anemic, poorly nourished, looks to be much older than the age which she gives. Urine bloody, 1,025, albumin, many red blood-corpuscles, no casts. Abdominal walls very lax. In the left upper quadrant of the abdomen was to be seen a bulging, which moves with respiration. Upon palpation, this mass is hard, very irregular in outline and nodular. The mass extends almost to the median line downward to the anterior superior spine of the ilium, and upward to disappear under the arch of the ribs. No tenderness, no fluctuation. Colonic distention shows the colon lying in front of the tumor mass. Cystoscopically, internal urethral orifice negative. Right ureteral orifice negative; emits clear urine.

The left ureteral orifice is normal but emits bloody urine in spurts. Diagnosis: Left-sided hematuria due to a kidney tumor. This was verified by operation — hypernephroma.

CASE 9.—A. S., aged 22 years. The patient's only complaint is the presence of a painless hematuria, of five months' duration, during which time the hematuria has never entirely cleared up. At times the amount of blood in the urine would be less than at other times, but at no time since the onset of the trouble has the urine had a normal appearance. It is very bloody on rising, at which time he thinks the hematuria is the most marked. Never any clotted blood, and the patient states positively that this is his first and only attack of hematuria. No frequency of urination and no urinary symptoms. The only pain of which the patient complained was in the left upper quadrant of the abdomen, persisting for about three weeks, more or less constant, but this has since passed away and he has had no further pain. General examination: temperature 101, pulse 100, marked pallor of the skin and mucous membranes. The heart, distinct apical pulsation in the fifth interspace, high accentuation of the second pulmonic, a mitral murmur and a slight murmur of aortic insufficiency. Lungs, no physical signs demonstrable. Abdomen, a tumor mass in the left side. The liver is palpable below the costal arch. Colon is tympanitic. Marked cyanosis of the toe nails and finger nails. First urinary report: bloody, 1,015, acid, no sugar, albumin, red blood-corpuscles, epithelial cells and leukocytes; no tubercle bacilli found. Blood count, hemoglobin 60 per cent., erythrocytes, 3,500,000, leukocytes, 4,500. Cystoscopically, bladder negative, both ureteral orifices negative. From the left ureteral orifice bloody urine is emitted in spurts. A second urinary examination showed the presence of a few granular casts. At this time a tentative diagnosis of tumor of the left kidney, with bleeding, was made. It was then decided to inflate the colon. Colonic distention shows the tumor mass to lie anterior to the colon, thereby demonstrating that the tumor was not of renal origin, but was splenic. The hematuria persisted, and the patient gradually went from bad to worse, and finally died. Post-mortem revealed the following: Chronic endocarditis of the mitral valve, enormously hypertrophied heart, enlargement of the mediastinal glands, cyanotic induration of the liver, chronic splenic tumor with infarcts, and a bilateral hemorrhagic nephritis.

This case presents several interesting features. First, the painless character of the hematuria; second, the presence of the tumor in the upper left quadrant of the abdomen; third, the bleeding coming only from the left ureteral orifice; and fourth, the post-mortem findings of bilateral hemorrhagic nephritis. It has usually been thought that when one kidney bleeds, we are dealing with a unilateral renal lesion; it must be borne in mind that when we are dealing with hematuria from one side, there may be something pathologic on the other side. This fact should be borne in mind in those cases in which nephrectomy is contemplated, for in cases in which a bilateral disease of the kidneys is present, although only one side may be producing symptoms at the time of the examination, to remove this kidney and leave an equally diseased one is not good kidney surgery. I have recently seen a patient come to operation in whom just such a state of affairs was present.

I had occasion to cystoscope this patient three or four years ago and made a diagnosis of right-sided hematuria. The patient was operated on, a decapsulation was performed, which did not cause the bleeding to cease. The bleeding persisted after operation just as severely as prior to the operation for six or seven months. The patient was then free from hematuria for two or three years. He recently came under observation

again, but this time the bleeding was from the opposite side, the side which had been normal or apparently normal at the former examination. He was operated on. The kidney showed the presence of many scars and retractions. A small piece was excised and examined histologically. This showed a chronic parenchymatous nephritis. Since he was operated on his urine has been free from blood.

These two cases illustrate the above-mentioned point that patients may have bilateral kidney lesions although at the time of examination only one side may be bleeding.

PROBLEMS OF PELVIC SURGERY *

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In presenting this paper for your consideration I wish to state that I have nothing essentially new to offer you. I have lately been reviewing my laparotomies in order to ascertain whether or not my present convictions were amply substantiated by my own past experiences, and the result of this critique is embodied in this paper.

The technic of pelvic section is now so exact and the primary results are so uniformly excellent that the possibility of sepsis following invasion of the peritoneal cavity almost escapes the surgeon's mind. In this security lies one of the great dangers of modern surgery. Primary mortality being almost nil, the surgeon is now chiefly concerned with the end-results of his operative procedures. In order to obtain the best end-results he must have (1) an accurate history of his patient especially as regards any previous pregnancies, miscarriages, criminal abortions or inflammations of the genito-urinary organs. We all know how cleverly a woman can deceive when she thinks her self-respect requires deceit, and I presume all of us have at some time or other given credence to a history whose distorted veracity was subsequently revealed by the sound or curette. Particularly is this true in referred cases where the family physician's diagnosis is accepted and less individual study of the case is given by the operator. Lest I be misunderstood, however, I wish to state that I have never yet had a case referred to me in which the attending physician's honesty could be questioned. I especially wish to emphasize the importance of an accurate anamnesis because of its bearing on the question of drainage in pelvic surgery.

2. Having made the diagnosis of the case and advised operative interference, if indicated, the surgeon should always be given ample latitude in every case to do more or less work in the pelvis than he had planned prior to the operation. He should not be asked to make any promises regarding the conservation or removal of organs; these matters should be left to his own judgment. It is seldom possible to diagnose the exact

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extent of the pathologic lesions in a pelvis and there should be a clear understanding between the surgeon and the patient's family in order to avoid possible future legal entanglements.

3. He must possess an accurate knowledge of gross pathology. What type of tube must be removed; which pathologic variety may be conserved; should resection of the ovary or excision of the same be performed; is it best that both ovaries be sacrificed? These are only a few of the problems which must be solved on the operating-table.

My own convictions regarding the proper treatment of these problems are based on personal observations and I trust they will be freely discussed and criticized. Our imperfect knowledge as regards certain causative factors prevents us from having any unanimity of opinion at times, so that the treatment of some pathologic conditions of the ovaries, for example, will vary with each operator. My special plea is to urge conservation of as much of the female genital tract as is consistent with the pathologic findings. That there has been in the past, and is still to a lesser extent at present, undue mutilation of the pelvic organs, is undeniably true.

I propose to consider the ovaries and tubes separately:

What type of ovary should be saved? The normal ovary is a small, oblong organ of relatively soft consistence. Its surface is not smooth but slightly nodular or umbilicated and there should be neither tension nor fluctuation on palpation of same. Any increase of intra-ovarian tension tends to cause the organ to assume a more or less spherical shape. Inflammations of the ovary tend to thicken its capsule, making it more difficult for the matured graafian follicles to escape.

1. Many of the so-called cystic ovaries which are still removed in large quantities are merely non-pathologic organs in which one or many graafian follicles or corpora lutea are imprisoned. These follicles contain a clear serum-like fluid, occasionally tinged with blood. Excision of these follicles will disclose an abundance of normal ovarian tissue in the remainder of the organ. The best interests of the patient demand that these benign non-morbid follicles be curetted out, and the defect closed by means of a running stitch of fine catgut. If there are multiple follicles palpable, the simplest way to reach all of them is to deliver the ovary through the abdominal incision, grasp its hilum with the thumb and index finger of the left hand, and open the ovary by making a longitudinal incision in the same manner that the pathologist opens a kidney for inspection of its pelvis. Each individual follicle can then be readily seen and curetted out. The two segments are then coapted and sutured with two sutures, one running back and forth through the center of the ovary, the other closing its capsule. The fingers of the left hand control the blood-supply very efficiently so that the hemorrhage is extremely slight. Care must be taken not to cut the ovary entirely through, as too much of the blood-supply would thus be destroyed. I do not wish to claim an invariable relief of painful symptoms by this procedure, but that it is successful in the vast majority of cases I am convinced by personal observation.

2. Myxoid cystomata: (a) glandular; (b) papillary.

Both varieties may present themselves as single large or small rounded cysts having projections of small cysts on the inner lining. The contents of these cysts are always a thick mucoid fluid, hence the term cystoma pseudomucinosum. The papillary variety may also present itself as a papillomatous condition of the surface of the ovary. These pseudomucous cysts are very frequently bilateral, and soon destroy all ovarian tissue. The glandular cystomata arise either from embryonal rests (Pflüger's tubes, or tubular indentations of the epithelium covering the ovary; constriction of the deeper portions of these tubes form the graafian follicles). The papillomatous variety is probably derived from the paroophoron or remnant of the wolffian body. Both varieties are thus seen to be due to faulty development. Inasmuch as they tend to destroy ovarian tissue and may undergo carcinomatous transformation, removal of the entire ovary should be the rule. Even though the cyst be unilateral, the opposite ovary should always be opened and closely examined for the presence of pseudomucin. Should any be found total castration should be performed. If consent to do this has not been obtained, the smaller cysts are curetted out and the ovary restored by means of two rows of sutures. Of six cases of this type which I have been able to keep under observation for periods varying between six months and five years, in which only one ovary was removed, recurrence has occurred in the remaining ovary in four cases, and the patients are now complaining of the same train of symptoms which originally brought them to the operating-table.

3. Dermoid cysts. These tumors are usually unilateral and should be removed with the entire ovary. The opposite ovary should also be opened and inspected as the dermoid may be bilateral.

4. Parovarian cysts closely resemble ovarian cystomata, but are almost invariably intraligamentous (between the layers of the broad ligament), unilocular in character and contain a clear serous fluid which may, however, be tinged with blood. The ovary itself is usually normal and should not be removed. These cysts can often be shelled out from between the layers of the broad ligament. Should the adhesions be very firm it is best to remove the cyst by making a triangular excision of the cyst and broad ligament, closing up the defect by interrupted catgut sutures.

5. Tubercular salpingitis. The peritoneal surface of the tubes is studded with minute tubercles, solid or cystic. My rule is to remove both tubes and to either anchor the ovaries on the under surface of the broad ligament or place them between the layers of broad ligament. The patient is thus saved the danger of pregnancy without undergoing the nervous upheaval of the artificial menopause. My reason for sterilizing such a patient is that, in over 90 per cent. of cases, tuberculosis of the tubes is secondary to tuberculosis of some other organ or organs and pregnancy adds a dangerous drain to an already weakened constitution. A hydrosalpinx may sometimes be left *in situ* after the contents of the sac have been evacuated. The fimbriae of the tube should be reflected on themselves and sutured by means of fine catgut after the method of

Murphy, in order to prevent recurrence of the closure of the tube. If the appearance of the tube is normal, except at its outer extremity, one can do a resection of the tube. An oblique incision running downward, outward and backward is made, severing the outer third or fourth of the tube. A dorsal incision opening into the lumen of the tube forms two small flaps which are turned outward and sutured to the tubal peritoneum by means of fine catgut. No assurance of a non-recurrence of the hydrosalpinx should be made to the patient in these cases. I have used this method in three cases, but as none of the patients have become pregnant or required further operative interference, the outcome, as regards patency of the tubes, remains an open question. Hemato- or pyosalpinges should always be removed, as the integrity of the ciliated epithelium of the tubes is destroyed and they are functionless organs.

Whenever it is possible to save one or both ovaries, or even portions of the same, removal of the tubes alone can easily be accomplished by making a V-shaped incision into the uterine cornua and then severing the mesosalpinx close up to the tube. Bleeding points are controlled by forceps and the defect is then rapidly closed up by means of a running lock stitch of catgut. By cutting close to the tube a minimum of blood-supply is disturbed.

6. In ectopic gestation the normal procedure is to remove the ovary with the ectopic tube simply because the technic is more rapid and we are very desirous of minimizing shock. Where the patient's condition is fair, it is best to leave the ovary *in situ*. Unless the patient is nearing the menopause it is preferable not to remove the opposite tube even though a clear history of gonorrhea be obtainable in the husband or wife, or both. Only last month a patient on whom I operated for tubal pregnancy in September, 1909, reported from Detroit that she had given birth to a normal child. In this case the husband readily acknowledged having had repeated attacks of gonorrhea prior to his marriage.

Drainage in Pelvic Surgery.—This has been a mooted question ever since the early days of laparotomies, and the dissension is not yet ended. Our present conception of immunity and of the factors contributing to it enable us, however, to more accurately gauge our cases. If our reasoning is accurate, and based on truthful data, the clinical results will be satisfactory. Of the greatest importance is a complete history of the case. If there is no previous history of pelvic inflammation obtainable and free pus is found in the pelvic cavity or escapes from a tubal or tubo-ovarian abscess during the operation, drainage should be instituted because the virulence of the infecting agent has not been attenuated by the formation of antibodies. In severe primary infections of the pelvis, I even drain through the vagina, where no free pus is found, on the principle that the salpingitis is only part of a general pelvic cellulitis which may go on to abscess formation after the removal of the pus tube. Many of the laparotomies followed by abscesses in Douglas' cul-de-sac undoubtedly belong to this class. Drainage at the time of operation would obviate the necessity of the "second operation" which the laity now too often mention as having been performed on one of their number.

Where repeated histories of pelvic inflammation are obtainable, drainage becomes unnecessary. A relative degree of immunity exists, and even the presence of free pus in the pelvis should not deter the surgeon from closing the incision without drainage. The extreme importance of obtaining an accurate history of the anamnesis in these cases becomes self-evident. Too often the patient herself has forgotten or does not wish to reveal the existence of prior infection and the operator must judge, from the status *præsens* and the operative picture, whether or not to drain. Two cases, keenly illustrative of the above situation, are constantly in my mind.

The first patient, aged 45 years, married, was sent to me in November, 1907, for diagnosis. On examination I found two sub-serous fibroids, the size of ordinary oranges to the right and posterior to the uterus. The entire tumor was freely movable. The adnexæ could not be palpated. I advised a hysterectomy which was declined. In April, 1908, I was informed that the patient had, for several days, been suffering from pelvic pains and now wished to be operated upon. She entered the Ravenswood Hospital, where I performed a panhysterectomy. A double pyosalpingitis was present, the right tube having ruptured with escape of free pus in the pelvic cavity. The operation presented no particular difficulties and the incision was closed with a small vaginal drain, which was removed in 48 hours by the intern. The patient's temperature promptly rose to 103.4; pulse 115; respiration 36. I was compelled to reopen the abdomen and insert three large cigarette drains. The patient made a slow recovery and is in good health to-day.

A more careful inquiry into the past history of this case revealed the fact that there had recently been a vulvovaginitis, followed by an acute onset of pelvic infection. Had I gone to the trouble of making minute inquiries regarding the history of the patient between November, 1907, and April, 1908, I should not have fallen into the error of regarding her entire pelvic disturbance as chronic. The fortunate outcome did not in any way mitigate the fact that I operated on this woman without having obtained an up-to-date history of her condition.

My second case is, in many ways, unexplainable even to-day.

An unmarried woman, aged 36 years, was referred to me for operation in 1908 with the following history. When 16 years old she fell on a picket fence, causing a marked wound of the abdominal wall, the scar of which was in the median line extending from the umbilicus three inches towards the pubis. An abscess formed in this region which was drained, the wound remaining open for about three months. From that time on she would have recurrent periods in which she complained of malaise or pain in the right side of the pelvis, this pain being of such a character that she spent most of her time in bed, when not actually at work.

Dr. W. George Lee was called in because of pain in the left ovarian region of a dull heavy nature, markedly affecting her work, so that she went to bed on returning home each day.

Bi-manual examination revealed no enlargement of the uterus, nor obvious enlargement of the ovaries, but there was tenderness in the left ovarian region. The menstrual history was negative. She had been previously examined by another physician who advised operation. Because of this and the fact that she was seriously handicapped in her work by this continuous pain, an exploratory laparotomy was decided upon. Patient entered the Ravenswood Hospital in April, 1908, and was prepared for laparotomy. On admission her temperature

was 99.6, pulse 120; respiration 28; no leukocytosis. Patient was extremely nervous and apprehensive of dying. On opening the peritoneal cavity no free fluid was found. The great omentum was found adherent on the right side to the parietal peritoneum at the site of the old abscess and also to the posterior wall of the bladder. In the left ovary were several follicular cysts containing fluid of a rather muddy yellow color. One of these cysts ruptured as the ovary was being removed. The right ovary contained one small cyst which was evacuated. The omental adhesions were loosened and the abdomen closed without drainage. Two days later the patient died of streptococcus peritonitis. Until within an hour or two of death there were no clinical findings which could be called alarming. The pulse remained rapid and patient was extremely nervous, but there was no abdominal distention. Colonic flushings were satisfactory and there was no "facies peritonitica."

No post-mortem examination was allowed but I was able to reopen the abdominal incision and make a rapid examination of the pelvis. It was filled with free pus, a culture of which was reported back as being pure streptococcus. Infection introduced at the time of the operation is hardly possible in view of the fact that patient ran a septic pulse and temperature from the time of the operation to her death. As far as the history obtainable showed, we were dealing with an essentially chronic condition of many years standing, and the pelvic findings on the operating table did not warrant leaving drainage.

I am of the opinion that an important part of the patient's history was never revealed to Dr. Lee or myself. In a similar case in future, I would reopen the abdomen and drain, in spite of the absence of definite focal symptoms.

When drainage is deemed necessary I use ordinary strips of gauze through an opening passing by way of Douglas' pouch into the vagina. If a supravaginal hysterectomy has been done I prefer dilating the cervical canal and passing the gauze through it into the vagina. When combined abdominal and vaginal drainage is necessary, I use cigarette drains, usually two or three in number. It has been my custom to leave the drains *in situ* for from three to five days, removing the last drain only when the discharge and the pulse and temperature curves are satisfactory. It is a mistake to replace drains; injury to the bowels may lead to fecal fistula. The Fowler position I consider of extreme importance in all drainage cases. The point which I especially wish to emphasize is to drain thoroughly if at all, and not to replace drains once removed.

In conclusion I would state that:

1. At present too much mutilating pelvic surgery is being done; by taking more time and care, if our technic is backed by a good knowledge of pathologic conditions, more resections and fewer excisions of the ovaries would be performed.

2. We must give more individual time and care in getting accurate histories of our cases.

3. Pelvic drainage is indicated in fewer cases if we understand the factors which bring about immunity.

4. There are and always will be border-line cases where the proper procedure to follow will have to depend on the instinct, or *flaire*, as the French call it, of the surgeon.

THE DANGERS CONNECTED WITH PREGNANCY

MARY J. KEARSLEY, M.D.

CHICAGO

The pregnant and obstetric patient, like the poor, we have always with us. Their constant presence should not dull our appreciation of their needs or lessen, in our estimation, the importance of our care of them. As in all other branches of the medical and surgical arts to-day the profession strives to prevent disease, so in our care of pregnant women we endeavor to prevent the complications that may arise during both pregnancy and confinement, and in our care of obstetric patients we use every effort to prevent them becoming gynecologic patients.

In the first place we should educate our families to realize that every pregnant woman should place herself under the supervision of her physician very early in pregnancy. Having done her duty in this respect it then devolves on the physician to comprehend her situation from the broadest possible viewpoint. In our general résumé of the dangers that may arise we may classify them in three groups:

1. Complications due to local conditions in the pelvis.
2. Those due to the effect of pregnancy on the general system.
3. Those due to concomitant diseases.

In our first group we have to consider conditions of the bony pelvis and of the pelvic organs. Of course if our patient has had hip disease, if she walks with a limp, if she has kyphosis or scoliosis of the lumbar spine, if she has a marked pit above the sacrum, if she shows signs of rickets, if she is a dwarf, if her pelvis seems twisted, or if she complains of severe pain and tenderness in her bones and increasing difficulty in walking, we would surely measure her pelvis. But would it not be better if we would take the external pelvic measurements in every primigravida and in every multigravida who gives a history of previous difficult labors? The detection of even a slight deviation from normal would put us on our guard and prepare us to give timely assistance. Some simple procedure might prevent an abnormal labor with disaster to both mother and child. I recall a patient of mine whose slight pelvic contraction caused delay in the onset of labor in her first two pregnancies. The first child, weighing 10 pounds, was born twelve days past full term after a slow, tedious, difficult, normal labor. Fifteen days after full term in her second pregnancy I was called because the waters had broken, and irregular, weak pains were felt. I found a pendulous abdomen, child's head freely movable in the lower uterine segment and resting on the abdominal wall, with the external appearance of a transverse presentation. Vaginal examination revealed escaping liquor amnii, slight dilatation of the os, no part of fetus engaged in brim, but a shoulder resting on the brim. Under complete anesthesia external version placed the head in the brim, manual dilatation was effected and a difficult high forceps operation delivered a living child weighing 12 pounds. While no laceration of the perineum was discernible at this time, in a few months we learned that

a subcutaneous separation of the levator ani muscles had occurred and had caused prolapse, rectocele and cystocele. Operation for lacerated cervix and perineum was then done. In her third pregnancy I induced labor twelve days before full term by the use of a Barnes' bag. A precipitate labor delivered an 8-pound child. Had I realized earlier the necessity of avoiding the prolongation of pregnancy beyond term in this case I could have saved my patient much suffering and injury.

Diseases of the pelvic organs may lead to many complications of pregnancy. A diseased endometrium may fail to build a healthy nest and the egg may perish and abortion result.

The same pathology may lead in the first three months of pregnancy to the formation of a vesicular mole. If in the bloody or watery uterine discharge we find cysts which look like "white currants in red jelly" our diagnosis is easy. When a pregnant uterus is distinctly larger than the history would indicate and of a boggy feel with entire absence of fetal signs of pregnancy, suspect hydatidiform mole. The uterus of a 3-months mole may reach to the umbilicus. I will never forget the amazement I experienced while watching the only case of molar pregnancy I have ever seen. The patient was one I had attended through numerous abortions, uninduced. At this time she and I believed another abortion was threatening. During a week of observation the uterus positively doubled its size. A most thorough emptying of the uterus is necessary in these cases, and because of the possibility of the later development of deciduoma malignum the contents should be subjected to microscopic examination.

After the third month diseases of the endometrium may produce the condition of placenta prævia with all of its dangers to mother and child from unavoidable hemorrhage. An abnormal Fallopian tube may be responsible for an extra-uterine pregnancy. This interesting and exciting entity has been so graphically and classically described in all our journals and text-books during the last two decades that we should be as familiar with its picture as we are with that of appendicitis.

DISPLACEMENTS OF THE UTERUS

While a retroflexed uterus may cause no symptoms and may easily ascend during the evolution of pregnancy, yet in some cases it becomes incarcerated in the hollow of the sacrum. At such times we must gently manipulate the organ and replace it in order to prevent miscarriage.

In her second pregnancy a woman aged 22 years sent for me at the end of the third month because, in her words, her womb was out in the world and the waters had broken. I found a complete procidentia with a badly lacerated cervix twice its normal size and eroded over much of its area. She said the womb was out all the time except when she lay in bed. During the next three weeks the prolapse continued in spite of packing the vagina, the use of the ball pessary, and much rest in bed. Also a more or less continuous discharge of water, at times blood-stained, and at times gushing freely, persisted, and there was some pain and much discomfort. At this time I was assisted by the consultation of Dr. Humiston and a week later with his advice I emptied the uterus of

a macerated 4-months fetus. The membranes were intact and the amniotic fluid was abundant, proving the discharge she had had was not liquor amnii, but was that of hydrorrhea gravidarum. The weakened musculature of the uterus was unable to even rupture the membranes, much less to expel its decayed contents. I hoped to repair the cervix and perineum and do an external Alexander one week after the miscarriage but the patient refused her consent. She has been well since that time and the uterus has remained in normal position as it had done previous to this pregnancy. In this case the uterine supports do maintain the uterus in the forward position at the proper elevation when no pregnancy exists, but they failed completely when the increased weight of gestation was added and I fear they will fail again if another conception occurs.

The second group of dangers, due to the effect of pregnancy on the general system, is covered by the large subject, toxemia of pregnancy. Deficiency in the uterine supports may give rise to serious complications. While investigators have thus far failed to find a special toxin responsible for this disease, we believe that increased metabolism and deficient elimination are causative factors. Pathology is always found in the liver. Acute hepatitis with cloudy swelling, granular degeneration, or necrosis is a constant accompaniment. In many cases the kidney is acutely congested or inflamed, resembling the kidney of scarlatina. The alkalinity of the blood is diminished. Oftentimes acidosis is present and is indicated by the finding of acetone bodies in the urine. All grades of virulence of the disease are observed. Mild forms produce moderate headache, some vomiting and constipation. Severe forms lead to intense headache, pernicious vomiting, acute nephritis, eclampsia.

In the general instructions to the patient early in pregnancy, she should be informed that she must excrete for two. She must have more abundant action of the bowels and kidneys than in the non-pregnant state and she must bathe the whole surface of her skin more frequently and vigorously, if possible, than she did before becoming pregnant. She must send a twenty-four hour specimen of urine to her physician every month the first six months, and every two weeks the last three months. She must take a healthy amount of exercise indoors and out of doors. By means of frequent urinalyses we may discover a beginning albuminuria and by early treatment eradicate it before the patient experiences any symptoms. But unfortunately it sometimes happens that, in spite of our precautions, eclampsia develops in full force without premonitory warning. This is one of the most tragic conditions we are called on to treat. May I cite a case in which urinalysis gave indirect assistance to a patient of mine? An elderly primigravida, aged 35 years, had enjoyed good health during eight months of pregnancy, and her urine had remained normal. At the end of the eighth month she sent one of her regular specimens of urine. This showed a free amount of albumin and a decrease of urea. I called on her the next morning without being sent for, and found her in bed with a wash bowl on the floor near by. She was alone in the house, save for the servant far away in the kitchen down stairs. She appeared dazed and drowsy. She answered my questions

sluggishly when I roused her, and immediately fell asleep again. I gathered that she had headache and had vomited. I telephoned her husband to come home and I secured a trained nurse. In less than two hours, while my preparations to deliver her were still in progress, I received a message that she had had a convulsion. This was succeeded by several other convulsions during the next twelve hours, and complete coma for twenty-four hours. That afternoon with the assistance of Dr. Reiterman and Dr. Gardner I delivered a dead child. It seems to me that had not that urine been sent to me and had I not gone to see her uncalled, her illness might not have been discovered until her husband returned at night. The ignorant servant might have gone to the patient at lunch time and believed she was sleeping and remained away from her the remainder of the day. If assistance had been delayed until night there might have been two deaths instead of one. Therefore it is important that the patient send her urine without fail even though she thinks she is in perfect health. Two years later this patient passed through a normal pregnancy and a normal delivery. Authorities differ in regard to the danger of recurrence of toxemia. It seems rational to believe that future pregnancies may be normal if the kidneys completely recover after the attack.

In the last number of the *American Journal of Obstetrics*, Dr. Judd calls attention to blood-pressure in pregnancy. He concludes that "it is likely one could foretell or prevent eclampsia by the guidance of a blood-pressure chart." No doubt the systematic use of a blood-pressure instrument would be a valuable addition to our treatment of pregnancy. There is one characteristic symptom of uremia or toxemia of pregnancy or threatened eclampsia which has struck me very forcibly in my patients' histories, but which I do not find mentioned in the text-books. It is severe, acute, epigastric pain. Beware of it. It is a danger signal.

It remains for us to mention hurriedly some of the concomitant diseases.

Syphilis and gonorrhea in the pregnant should be treated with even greater force and energy than in the non-pregnant, if this is possible.

If a pregnant woman contracts pneumonia her life is in peril.

The coexistence of active tuberculosis and pregnancy is a sad misfortune for both mother and child.

Heart disease with lack of compensation calls for careful treatment during both pregnancy and confinement.

Chorea in pregnancy may assume fatal proportions.

Pyelitis during pregnancy causes an acid urine containing pus which may give a pure culture of colon bacillus. If the disease does not yield to vesical irrigation and rest in bed, vaccine therapy is indicated.

If an attack of appendicitis during pregnancy requires an operation we should not hesitate to operate.

The presence of an ovarian cyst during pregnancy warrants a laparotomy, for the great size the cyst may attain and the danger of torsion of its pedicle constitute a menace to life.

Myomata of the uterus in conjunction with pregnancy may, as a rule, be left undisturbed. It is surprising how frequently normal delivery is completed by a uterus beset with many large myomata. However, we should insist that such a patient enter a hospital before labor begins. In such surroundings, should obstruction to labor necessitate major surgical procedures, they could be undertaken without delay.

If sarcoma or carcinoma of the uterus is diagnosed during pregnancy the treatment should be the most complete total hysterectomy possible.

In all conferences with a pregnant woman the physician should never for one moment disturb her composure and peace of mind, or give her any cause of anxiety. Rather should he always add to her feeling of safety. A physician who needlessly makes such a patient apprehensive resembles the "digitally diligent" obstetrician who does his patient in labor more harm by his presence than by his absence. But the physician who prevents fear prepares his patient for a danger to which nearly every pregnant woman is subjected. I refer to the friend or neighbor who calls on her sooner or later and relates all the dire experiences which in all probability will be hers. If our attention has been all it should be such calamity stories will make only a momentary impression on the patient. She believes her physician is acquainted with her individual needs, that he has used every possible precaution to prevent abnormalities, and that he is prepared to meet all expected and unexpected emergencies.

So with an unfaltering trust she approaches the supreme ordeal of her life.

IN MEMORIAM

THE UNDERGRADUATE LIFE AND EARLY MEDICAL WORK OF PROFESSOR ALEXANDER HUGH FERGUSON, M.B., M.D., C.M., F.T.M.S.*

"By medicine life may be prolonged,
Yet death will seize the doctor, too."

—Shakespeare.

A. McDERMID, A.M., M.D.

CHICAGO

Mr. President, and Members of the Chicago Medical Society: Assembled to commemorate the life-work and death of a distinguished member, a former president of this society, I have the privilege and honor, by virtue of a long and valued acquaintanceship, of presenting a few of the chief facts and characteristics of the earlier years of his life.

I will ask your indulgence for such reference to myself as may seem necessary in this connection.

* Read at the Ferguson Memorial Meeting of the Chicago Medical Society, Feb. 7, 1912.

Dr. Alexander Hugh Ferguson was born in Victoria County, Province of Ontario, Canada, Feb. 27, 1853, his parents being natives of Argyleshire, Scotland.

At a comparatively early age he removed with the family to the Province of Manitoba, being veritably a pioneer, as the railway did not reach that region until many years later.

There he received a liberal, preparatory education at Rockwood Academy, where he was later a teacher of Latin, and in Manitoba College, Winnipeg, where also for four years he was an instructor.

About this time, too, he began the study of medicine under the preceptorship of Dr. John H. O'Donnell, who is still in active practice in Winnipeg, the oldest practitioner of medicine north of the forty-ninth parallel of latitude.

In 1878 he entered Trinity Medical School, Toronto, and I had the good fortune not only to make his acquaintance but to live in the same house with him, thus enjoying the very best opportunity to observe his character and work.

Although two years his senior in college, and therefore not in the same classes, I could not fail instantly to appreciate his natural and acquired endowments. His brilliant and receptive mind had been developed by an admirable preparatory education, and he had not only acquired knowledge, but perhaps more important, the habit and faculty of application to study. Energy, ability, and indefatigable work were his great characteristics.

I remember well how, not satisfied merely with the required courses in his own college, he also attended courses in biology and kindred subjects at the School of Practical Science in a distant part of the city, simply prompted by a desire for greater knowledge and a broader outlook. Yet he was not a bookworm, nor a recluse, but took part in all the activities of the college and was one of the strongest football players on the college team.

He was the leading competitor of his college in the annual examinations and at his final examination was awarded a medal for general proficiency. A few years ago I had the pleasure of conversing with the venerable dean of the college, Dr. W. B. Geikie, who still remembered and spoke of Dr. Ferguson in terms of the highest admiration.

Dr. Ferguson graduated in 1881, Fellow of Trinity Medical School, and Bachelor of Medicine and Master of Surgery of the University of Trinity College, Toronto, thus early indicating his predilection for surgery by electing the special examination required for the latter degree. In 1884 the University of Manitoba conferred on him the degree of M.D.

After a few months spent in practice in Buffalo he located in Winnipeg, in 1882, where for twelve years I enjoyed his professional companionship and inspiration and an unbroken friendship.

In 1883 he threw himself with his accustomed energy into the work of organizing the Manitoba Medical College to meet the wants of the young men of that rapidly rising community, the first meeting for that purpose being held in his office. For three years he was professor of physiology

and for eight years professor of surgery in the college, and was acknowledged as a brilliant teacher, adored by his students and admired by his colleagues. It is not too much to say that in a great measure the success of that institution during its formative years was due to his energy and ability. Some two years ago he was guest of honor at a banquet tendered him by the college in recognition of his services as one of the founders.

In 1889 he made a tour of the principal medical centers of Europe, and spent six months in the laboratory of Professor Koch, obtaining a certificate in bacteriology from the University of Berlin.

From this time, although in general practice, his rise in surgery was rapid and secure and he soon was recognized as the most brilliant operator in the West, if not, indeed, in the whole of Canada. I have seen a great deal of his work and I regarded him as the most resourceful and masterful operator I have ever seen. No danger seemed to daunt him.

His operation for hydatids of the liver and other organs attracted wide attention and at this time also he began the development of his special operation for inguinal hernia, at the same time developing his amazing celerity in operations for cleft-palate.

On the organization of the Manitoba branch of the British Medical Association, the profession made him its first president. He was chief surgeon of St. Boniface Hospital, a member of the surgical staff of Winnipeg General Hospital, of Brandon Hospital and of Morden Hospital. As a tribute of esteem, the former two institutions declined his tendered resignation and retained his name until his death.

In 1882 he was married to Miss Sarah Jane Thomas of Ontario, Canada. Their family comprised two sons, Ivan Havelock and Alexander Donald. Both have essayed to follow their father's profession and the latter will graduate shortly.

I am proud to have been the medium of bringing his name and his work to the notice of one of the medical schools of Chicago in 1892, resulting in his appointment to its teaching staff before his arrival here in 1894, where he so abundantly justified my fervid endorsement.

His removal from Winnipeg in 1894 was regarded as a civic and national calamity. He has often been recalled to perform important operations in various parts of his native land, while numberless patients from that country have sought his skill in Chicago.

I voice the sincere sorrow with which the news of his death was received in his home land. Not only those of the laity who knew and loved him so well, but especially his former colleagues and students, are overwhelmed with sorrow at his untimely demise.

He was thoroughly public spirited, devoted to the best interests of his city and country and ever ready to promote the interests and uphold the honor of his chosen profession. His public benefactions were numerous and liberal. I might speak of his generosity and devotion to his relatives and friends but these are too intimate and sacred. So also of his professional and personal kindness to me and to my family, to which I here pay grateful tribute.

I may justly say that throughout my professional life no other has touched mine so intimately and on so many sides as have the life and friendship of Dr. Ferguson.

"He was my friend, faithful and just to me."

I cannot forget how, when performing my first laparotomy, his presence gave me confidence and his kindly counsel, so generously bestowed, marked the character of the man. His friendships were of the strongest kind, loyal, devoted and tender.

Tennyson says "He makes no friends, who never made a foe," So, in the career of Dr. Ferguson, antagonisms may have arisen, but he was ever the honorable and frank antagonist, battling honorably for what he believed to be justice and right.

"Give me the avowed, the erect, the manly foe;
Bold I can meet—perhaps may turn his blow."

From his life we may learn not only the lesson of devotion to professional duty but of brotherly kindness toward our professional associates.

An unbroken friendship of thirty-three years thus rudely severed, I may say in the words of Longfellow:

"O Friend! O best of friends! Thy absence more
Than the impending night darkens the landscape o'er."

—The *Mail Order Journal* has the following defense to make for patent medicine and gives a "knock" to the doctors in connection with *Collier's* attitude toward Champ Clark for a patent-medicine testimonial: "*Collier's Weekly* has seen fit to attack Speaker Champ Clark for a testimonial given to a patent medicine eleven years ago and published in a Texas County paper. 'At the end of the last campaign,' writes Champ Clark, Missouri's brilliant congressman, 'from overwork, nervous tension, loss of sleep and constant speaking, I had about utterly collapsed. It seemed that all the organs in my body were out of order, but three bottles of Electric Bitters made me all right.' What of it? Why should a public man not give a testimonial which has done him good and which is generally sold by druggists and not prescribed by a regular doctor? The question is, has Mr. Clark told the truth, and we have no reason to doubt that he did. We know of other prominent members of Congress who are using patent medicines with beneficial results. They have probably tried regular doctors and found them no good. They did not wish to go to the expense of doctors' visits and remain under their observation until a big bill for the cure of a slight ailment is run up. The main issue is, has the patent medicine used by a public man merits, and if so, and it has benefited him, why should he not have the right to publicly say so? There are too many doctors who would be better fitted for blacksmiths or ear drivers or porters. A recent review of our medical institutions by an acknowledged authority in the medical field, shows that there are too many of them that ought to be exterminated. Why should a man who cares for his health and life entrust himself to doctors turned out by medical schools that ought to be wiped out, for they are a danger and menace to the health of the people."

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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AUGUST, 1912

INDUSTRIAL INSURANCE AND THE MEDICAL PROFESSION

The profession of Illinois is rapidly waking up to the fact that the state is moving gradually but steadily toward industrial insurance, which had its origin in Switzerland and Germany, and is in course of adoption in Great Britain. This subject is of vital interest to the profession, and it behooves us to get busy to see that the profession of medicine is not completely overwhelmed in the cataclysm which is impending. Much has been written on this subject, so that no doubt a great many of our readers have some idea of the status of affairs in Illinois. Very recently the McLean County Medical Society has taken this matter up and addressed a letter to each of its members as well as to the companies undertaking to insure employers of labor under the state statute in that county. We commend these letters, which we reprint herewith, to the earnest attention of the profession in all parts of the state.

Dear Doctor:—Since the law has gone into effect making the employer responsible in case of accident to the employee, the employers are taking insurance to cover the risk imposed, and now the Casualty and Accident Companies are asking us to sign a fee bill much below the society fee bill. While we are not to advise you as to what you accept for your services, we do feel that it is hazardous to have such fee bills signed by us and in general circulation as it may react on us here and tend to reduce our

compensation in private practice. Remembering that the work rendered these companies cannot be exclusive, as the employee has the right to employ such physician as he may choose, we wish to ask you to refuse to sign such fee bill as they may present, but be governed by our regular custom. We have endorsed a statement to such companies and we beg to suggest that you endorse with us and send it to any companies requesting you to sign any such fee bill as your answer. More copies of the enclosed statement may be obtained any time by addressing the secretary.

Yours truly,

W. H. GARDNER, Pres.

T. D. CANTRELL, Sec.

*To Casualty and Accident Companies,
Doing Business in McLean County, Illinois:*

The undersigned members of the McLean County Medical Society and practitioners of medicine and surgery in the county of McLean and state of Illinois, beg to inform you that we shall be pleased to serve your patrons when injured, on such basis of compensation as is customary to charge in this vicinity.

The charges of the McLean County Medical Society are based upon fair and just estimates of what such services are worth. The responsibility involved in rendering surgical services is so great that adequate compensation is necessary.

The undersigned have unanimously agreed to the above statement:

E. Mammen, E. A. Behrendt, A. W. Meyer, J. K. P. Hawks, Thos. W. Bath, John L. Yolton, J. Whitefield Smith, W. H. Gardner, Chas. E. Chapin, Edson B. Hart, F. C. Vandervoort, W. W. Gailey, J. J. Condon, A. R. Freeman, J. P. Noble, H. L. Howell, L. L. Irwin, E. P. Sloan, F. C. Fisher, Homer H. Griffin, A. R. DaCosta, L. B. Cavins, A. E. Rogers, M. D. Hull, J. H. Fenelon, R. A. Noble, O. M. Rhodes, Geo. B. Kelso, William M. Young, A. L. Fox, R. D. Fox, Joseph Hallet, J. H. Godfrey, C. R. Carr, A. J. Morris, George R. Smith, T. D. Cantrell.

THE CHICAGO LAUNDERERS AND THEIR PUNISHMENT

For several years the people of the state of Illinois have been compelled to bow their heads in shame because of the fearsome conditions which had their origin in the purlieus of their chief city, and from thence have gone forth corrupting the ambitions, weak and venal material to be found in scattered communities through the state. This political pot of tar became too hot, finally boiled over and a scandal involving the United States Senate resulted in giving the state a disgraceful notoriety over the entire world. It required a near revolution to cure this disgrace.

We fear the medical profession is destined to go through the same sad experience. Formerly recognized as the location of the one advanced school in the United States; the home of the honored founder of the American Medical Association and of this advanced school, Chicago occupied an enviable position in the medical world.

When the time came for the American Medical Association to throw off its swaddling clothes and step forward to an advanced position by publishing a weekly journal, no place was considered so suitable as the young giant city of the west, and no person so worthy to conduct that enterprise as the venerable N. S. Davis. Through weeks and months Dr. Davis guided the infant enterprise, his labor great, his compensation small. But finally advancing years compelled him to give up the labor, and then the turmoil began. It was not so apparent at once. But before long the *Journal* and the business of the Association pressed forward with titanic strides, and then commenced unseemly strife for control of its affairs. The tribulations of Israel were forgotten and ambitious men stepped in ready to reap the rich harvests which the humble workers had planted. We need not pursue this history in detail. Probably we are not familiar enough with it to do the subject justice, but that it has reached large and disgraceful proportions was revealed at the recent Atlantic City meeting.

Several of the distinguished gentlemen elected as delegates at the Springfield meeting were in the thick of the fight and *lost*. We append herewith the statement which appeared in an account of the meeting in the June issue of the *Pennsylvania Medical Journal*. We wonder whether the washing of the Chicago soiled linen will continue to the discredit of the laundrymen and the disgrace and great moral and ethical depression of our metropolis and state:

"The only contest was over the reelection of Dr. M. L. Harris, Chicago, as trustee. Dr. Harris was reelected by a vote of more than two to one. There is still some friction in Chicago over the management of the Association, and it may be necessary to remove the headquarters of the Association from Chicago to St. Louis, Washington or elsewhere, in order to do away with the annual washing of Chicago's dirty linen."

THE CHICAGO HOSPITAL COLLEGE OF MEDICINE

N. Odeon Bourque, signing himself registrar of this college, has sent us a communication regarding the editorial article which appeared on page 121 of the July issue of the *ILLINOIS MEDICAL JOURNAL*.

We are very glad to give place to the letter and print it verbatim et literatim as it was sent us. The letter itself is probably as good a vindication of the statements made regarding this college of medicine as could be wished. We have written the registrar asking him to inform us who "exhonorated" him of any wrong doing in the signing of the two diplomas which were issued by the Crescent Medical University and sold to a lay-woman.

The following is the registrar's letter and also his answer to our query:

CHICAGO, July 17, 1912.

ILLINOIS MEDICAL JOURNAL,

Springfield, Ill.

GENTLEMEN:—An article appeared in your July journal, page 121, under the heading "Chicago Hospital College of Medicine, ready for business," which contained slurs of a very damaging nature to both, said institution and the writer; therefore I ask that you correct theses statements in your next issue by giving equal prominence to this letter in your columns.

In the first place no exposure was made either by your journal or that of the A. M. A., which did not show gross ignorance and injustice, for "The principal of arriving at a conclusion, prior to investigation is a bar against information, a proof against argument, and will keep a person in everlasting ignorance.

In the publishing of the artical in your last issue it seemed clearly calculated to injure both the school and the writer.

In the extensive dicussion of Dr. Chittick, and his Crescent Medical University, you tried to make it appear that there was a connection between said institution, the Chicago Hospital College of Medicine, and the writer. You state that the writer's name appeared on two diplomas issued by the Crescent Medical University, but you did not say that it was there without his knowledge, consent, or authority, neither did you state he was entirely exhonarated of any wrong doing in that case.

What right or privilage has your editor of slandering fifty other reputable, qualafied medical men and women connected with the Chicago Hospital College of Medicine by insinuating that diplomas may be bought from the said institution?

If you desire to be fair to your readers you should investagate before condemning. Our doors are open for a through investigation of our faculty, equipment and methods.

The Chicago Hospital is a part of our institution and by way of introduction would say that the late Dr. Ferguson Professor of Sergury at the U. of I. organized, erected and established this hospital at an approximate cost of \$40,000.00 and use same as his private hospital until a short period previous to his death. The operating rooms, facilities and general equipment are, we believe, second to none in the city of Chicago. Only good work is done in this hospital and it is open to reptable physicians and their cases.

Will further say that our school is the only school in Chicago which offers, to indigent, worthy and qualified men and women, a chance to obtain a medical education.

Very respectfully,

N. ODEON BOURQUE, M.D.

Registrar to the C. H. C. of M.

To the Editor:—In answer to yours of the 19th inst. will say that (3) three separate and distinct bodies investigated the charges against me. The one of most interest to you will undoubtedly be the U. S. District Attorney, by whom the charges were dismissed.

I note what you say concerning the publishing of my letter of 17th inst.

Very truly,

N. ODEON BOURQUE, M.D.

HEALTH CONFERENCES HELD IN MICHIGAN. DID YOU EVER HEAR OF ONE IN ILLINOIS?

A recent issue of *Public Health* — the bulletin of the Michigan State Department of Health — contains a report on the health officers' conference held at Ann Arbor, January 30-31. This annual conference of the local and state health officers has come to be an established custom in Michigan. Water-analysis, the need of a state hospital for advanced cases of tuberculosis, water-purification, certified milk, garbage-disposal, hotel-sanitation and occupational diseases were discussed before the conference. While it is important from a scientific standpoint, perhaps the greatest practical value of such a conference is that it brings together, and makes mutually acquainted all of the men in the state who are working directly on public health problems. Perhaps the most serious flaw in our public health work so far has been the lack of close cooperation and mutual understanding between the different detachments of the army that is carrying on this fight. Lack of organization and cooperation means duplication of work with waste of money and effort. The *Journal A. M. A.* calls attention to the fact that Michigan and Kansas are striving to unite the health-workers of the states into a compact and effective body which will render more effective warfare against disease than can the isolated town and county health officers found in too many of our states.

SYMPOSIUM ON MENTAL DISEASES HELD AT HOTEL LA SALLE, CHICAGO, APRIL, 1912

This month we print a number of papers and discussions on the same, read at the symposium recently held in Chicago. These papers were read by distinguished gentlemen interested in this subject from various states in the Union. The *JOURNAL* went to considerable expense to secure complete copies of the papers and discussions of this symposium, and we believe our readers will take pleasure in learning the modern views on these important subjects.

DISHONEST FAT-REDUCING SCHEMES

While a strict system of diet combined with appropriate exercises is probably the only safe and efficient method for the treatment of obesity, just those who should employ these means are the ones that like an abundance of rich food and have a strong dislike for exercise. As a result these persons become easy victims of quack obesity cures.

It is interesting to note that the advertised obesity cures, sold with a claim that neither dieting nor exercising is needed, nevertheless depend on these very means for their success. As, however, it is not an easy matter to obtain continued revenue from a dupe by giving mere advice to eat moderately and to exercise liberally, these treatments also advocate the continued use of some medicine supplied by the faker. Two of these obesity cures have recently been exposed.

Turner Obesity Cure.—"Dr. Turner's Triplex System of Weight Reduction" is exploited by the Dr. Turner Company of Syracuse, N. Y. Money is obtained from victims under the pretense that dieting, exercise and purging are not a part of the treatment. After obtaining the money the victim finds that he must follow a strict diet, that he must exercise and that he must take medicines, sold by the concern, particularly "Dr. Turner's Concentrated Food Tablets" and "Dr. Turner's Special Food Tablets" which, when examined in the Association's Chemical Laboratory, corresponded in composition to evaporated whey. Attempts are also made to wheedle the victims into purchasing a "To-Kalon Keapshape Corset" or a "Neal Reducing Belt." Dr. Francis M. Turner, whose name is used in exploiting this treatment, is also the manager of the Vanadium Chemical Company of Pittsburgh, which is introducing vanadiol to the medical profession (*Jour. A. M. A.*, June 22, 1912, p. 1961).

Marjorie Hamilton's Obesity Cure.—This is claimed to be a dietless and drugless system for the treatment of obesity. The advertising booklet sent out by Marjorie Hamilton, Denver, prescribes, however, a system of dieting and as a means of revenue to the promoter prescribes frequent baths with "Healthtone-Obesity Bath Powder," sold at \$2 a pound, to be applied to "the fat parts or whole body twice daily." Marjorie Hamilton's bath powder was examined in the Chemical Laboratory of the American Medical Association and found to consist chiefly of sodium carbonate with smaller amounts of magnesium sulphate, potassium nitrate and possibly sodium sulphate (*Jour. A. M. A.*, March 16, 1912, p. 798).

LOOK WHOM YOU TRUST

With the keen appreciation of evidence characteristic of its state, *The Journal of the Missouri State Medical Association* in an editorial "Trau, schau, wem," a German proverb, meaning "Look whom you trust," says (June, 1912, p. 485): As a business house would scout a request to cash a check presented by an unknown individual, so physicians should refuse to pay attention to the claims made by firms of unknown standing for their proprietary medicines. Still more should they refuse to pay heed to any preparations put out by a firm which has once been shown to be unreliable, as much as a commercial concern would quickly and positively refuse to cash the draft of one whose paper has been found to be worthless.

These thoughts, it is stated, are suggested by an inquiry concerning the value of phytoline, put out by the Walker Pharmacal Company. A report of the A. M. A. Chemical Laboratory on the Walker Pharmacal Company's hymosa (*Jour. A. M. A.*, June 11, 1910) having shown that this firm puts out nostrums of the worst class—the kind whose composition is falsely declared—it would be the height of folly to give consideration to phytoline or any other product put out by this firm.

In line with this Missourian common sense the *Jour. A. M. A.* (June 29, 1912, p. 2043) suggests that the measure of the Tilden Company, New Lebanon, N. Y., may be taken from a consideration of the facts

brought out by the A. M. A. Chemical Laboratory report of Hydrocyanate of Iron-Tilden, and a conviction under the Food and Drugs Act for the misbranding of its Febrisol. While the Hydrocyanate of Iron report showed that the firm held the composition of this preparation a "trade-secret" and made misleading, if not false, statements regarding it, the Febrisol trial definitely proves that deception was included in the policies of the firm.

Physicians should appreciate that they are taking unwarranted liberty with their patients when they prescribe a remedy put out by a firm which has been shown to be untrustworthy.

WORLD'S PURITY FEDERATION

Dr. Horace Reed, the well-known Methodist clergyman, has been for some time engaged as field lecturer for this organization, and wishes to get the assistance of all medical men of the state in creating public sentiment for the enactment of better marriage and divorce laws and proper purity teachings in all high schools, colleges and universities, and also to make known the awful consequences of the social evil.

We have so often spoken of this crusade that we will only mention the fact that Dr. Reed can be secured by the public for lectures on this subject on the recommendation of city and county societies in aid of the propagation. Dr. Reed is located at Decatur.

THE LEGISLATIVE SITUATION

The legislative committee of the State Medical Society and the Public Relations Committee of the Chicago Medical Society before the recent primaries sent to every candidate for the State Legislature the following letter and an enclosed return postal with a pledge written thereon:

Dear Sir: During every session of the legislature, numerous bills are introduced attempting to amend the Illinois Medical Practice Act in regard to the licensure of those who desire to treat human ailments without a fundamental knowledge of medicine and surgery.

It is the opinion of the medical profession that the present law meets all reasonable demands for every system of treatment, and that the Illinois State Board of Health should have supervision as heretofore over sanitary matters and licensure, including all systems of practice.

For your information we quote the following from the Medical Practice Act now in force:

"Examinations may be made in whole or in part in writing by the Board, and shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner. The examination of those who desire to practice medicine and surgery in all their branches shall embrace those general subjects and topics, a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine, by reputable medical colleges in the United States. The examination of those who desire to practice midwifery shall be of such a character as to determine the qualification of the applicant to practice midwifery. The examination of those who desire to practice any other system or science of treating human ailments who do not use medicines internally or externally, and who do not practice operative surgery shall be of a character sufficiently strict to test their qualifications as practitioners.

"And this act shall not apply to surgeons of the United States army, navy or marine hospital service in the discharge of their official duties, or to any person who ministers to or treats the sick or suffering by mental or spiritual means, without the use of any drug or material remedy."

You will observe that the present law does not discriminate in favor of any system of treatment.

If the law permits a man to call himself a doctor of medicine and surgery who has not a sound knowledge of the science, the law is permitting a fraud and a hazardous fraud upon the people and is abasing itself before a counterfeit. In order therefore to effectually protect the public against incompetency every person seeking the right to practice medicine in its broadest sense or who desires to practice on any of the organs of the body should have the fundamental training and knowledge necessary to recognize disease so as to enable him to differentiate one disease from another, otherwise great injury may be done by failure to recognize abnormal conditions or disease at a time when something can still be done towards effecting a cure.

The medical practice act should be amended in one particular so as to give the State Board of Health power to revoke for cause physicians' licenses issued prior to 1899, the same as those issued since that date. The authority of the State Board of Health should be uniform in its application regardless of the date of license.

In order that we may be able to report to our constituents at the earliest possible moment the attitude of the respective candidates, will you kindly indicate on the enclosed card what, if elected, will be your inclination along the lines indicated.

Thanking you in advance, we are

Very truly,

JOSEPH M. PATTEN, M.D., Chicago, President.

GEO. F. SUKER, M.D., Chicago, Secretary.

J. V. FOWLER, M.D., Chicago.

E. M. WEBSTER, M.D., Chicago.

CHAS. J. WHALEN, M.D., Chicago, Chairman.

Public Relations Committee of Chicago Medical Society.

W. K. NEWCOMB, M.D., Champaign, President.

EDMUND W. WEIS, M.D., Ottawa, Secretary.

M. S. MARCY, M.D., Peoria.

CHAS. J. WHALEN, M.D., Chicago.

L. C. TAYLOR, M.D., Springfield, Chairman.

Committee on Medical Legislation Illinois State Medical Society.

If elected to the Illinois Legislature I will do my utmost to maintain one standard for all practitioners of medicine and will use my influence to defeat any legislation the object of which is to permit any cult to practice medicine at a standard of medical education lower than those already in the field under the pretext that its followers are not practicing medicine. I shall at all times support medical legislation which is in the interest of the people of the State and not for the interest of any special cult or school of practice. I shall vote to retain, in Illinois, a one board supervision over all medical matters, including the examination of candidates for practice. That the examination be for all alike, whether they belong to the now recognized schools of medicine or have tacked onto their names some "path," "cult" or "ism."

I will use my best efforts to help amend the medical practice act so as to give the State Board of Health supervision over all medical licenses issued by the State of Illinois.

Candidate from the District.

.....

.....

The committee submits the character of replies. S, in the blank space before the name denotes that the pledge was signed and is satisfactory; E, that the answer was evasive; R, that he refused to sign, and blank before the name that no reply had been received up to the time of going to press. O P, in the blank space after the name denotes that the legislator after whose name it appears voted for the Optometry bill in the last session, and O S, in the blank space after a name denotes that he had voted for the Osteopathic bill. Where blank spaces appear in front of a name the County Medical Societies should get busy with the candidate and secure a pledge if possible, and report same to the legislative committee. The following is the index:

CANDIDATES FOR THE GENERAL ASSEMBLY

FIRST DISTRICT.—The First and Second Wards in the City of Chicago*

House....Republican	S—Maurice J. Clarke.....	124 E. 22d St.
	S—Edward D. Green.....	125 W. 26th St.
	Democratic	John Griffin.....2020 Indiana Ave.
	Prohibition ....S—Simcon W. King.....	71 Van Buren St.
	Socialist	L. S. Farmer.....12 Hubbard Court.

SECOND DISTRICT.—The Twentieth Ward and parts of the Eleventh and Twelfth Wards, Chicago.

Senate....Republican	Lewis C. Ball.....	929 S. Irving Ave.
	Democratic ....S—Francis A. Hurley.....	1015 Cypress St.
	Prohibition	Victor Behrens.....2252 W. Jackson Blvd
	Socialist	H. P. Jensen.....215 Laflin St.
House....Republican	S—Frank J. McNichols.....	1103 S. Winchester Ave.
	S—Roger J. Marcy.....	1953 W. Congress St.
	Democratic ....S—John F. McCarty.....	714 S. Claremont Ave.
	S—Geo. U. Lipshulch.....	920 S. Ashland Blvd.
	Prohibition ....S—J. F. Baumeister.....	1802 W. 12th St.
	Socialist	L. S. Manly.....1837 Washington Blvd.

THIRD DISTRICT.—The Third and parts of the Fourth, Fifth and Sixth Wards, Chicago.

House....Republican	S—Robert R. Jackson.....	435 E. 37th St.
	William Ostrom.....	3136 Princeton Ave.
	Democratic	John P. Walsh.....3127 Union Ave.
	Henry M. Ashton.....	3716 Lake Ave.
	Prohibition ....S—George W. Doolittle.....	3441 Vernon Ave.
	Socialist	Aaron L. Voorhees.....3524 Indiana Ave.

FOURTH DISTRICT.—The Twenty-Ninth and Thirtieth Wards and part of the Thirty-First Ward, Chicago.

Senate....Republican	S—Joseph J. Wehner.....	4741 Ada St.
	Democratic	Al F. Gorman.....5436 Morgan St.
	Prohibition	D. J. Stewart.....4424 Union Ave.
	Socialist	Oswald Fahrbach.....1311 50th St.
House....Republican	Thomas A. Boyer.....	4454 Emerald Ave.
	S—John Hrubec.....	1958 W. 51st St.
	Democratic	George C. Hilton.....5440 Winchester Ave.
	Martin R. Gorman—O. P.....	5106 S. Paulina St.
	Hubert Kilens.....	5026 S. Ashland Ave.
	Prohibition	J. C. Bohart.....4430 Emerald Ave.
	Socialist	Joseph A. Ambroz.....5335 S. Wood St.

FIFTH DISTRICT.—Parts of the Sixth and Seventh Wards, Chicago.

House....Republican	R—Isaac S. Rothschild.....	4444 Prairie Ave.
	S—Morton Denison Hull.....	4855 Woodlawn Ave.
	Democratic	Michael L. Igoc.....5463 Greenwood Ave.
	S—Charles Naylor.....	4909 Wabash Ave.
	Socialist.....	J. O. Bentall.....5406 Drexel Ave.

* Refers to "old" ward boundaries.

SIXTH DISTRICT.—The Twenty-Fourth and Twenty-Sixth Wards and parts of the Twenty-Third and Twenty-Fifth Wards, Chicago, and parts of the towns of Evanston, Niles and New Trier, all in the County of Cook.

Senate....	Republican	.....	William M. Brown—O. P.*	2161 Eastwood Ave.
	Democratic	....S—	Wm. J. Stapleton	3902 Perry St.
	Prohibition	.....	Edward S. Jones	1510 Morse Ave.
	Socialist	.....	Charles O. Grant	3039 W. Ravenswood Pk. Ave.
House....	Republican	....S—	Richard P. Hagan	4303 N. Paulina St.
			William E. Anderson	Evanston.
	Democratic	....S—	Robert E. Wilson	4025 Perry St.
			Joseph A. Weber	1921 Belmont Ave.
	Prohibition	.....	Frank J. Kline	Evanston.
	Socialist	.....	Hugo H. Hahn	5064 N. Winchester Ave.

SEVENTH DISTRICT.—The towns of Thornton, Bloom, Rich, Bremen, Orland, Lemont, Palos, Worth, Lyons, Stickney, Proviso, Leyden, Elk Grove, Schaumburg, Hanover, Barrington, Palatine, Wheeling, Northfield, and parts of the towns of New Trier, Niles, Norwood Park and Maine, all in the County of Cook.

House....	Republican	....E—	John M. Curran	Winnetka.
			Frederick B. Roos	Forest Park.
	Democratic	.....	J. J. O'Rourke	Harvey.
	Prohibition	.....	John F. Gieske	Barrington.
	Socialist	.....	Wm. E. Clark	Maywood.

EIGHTH DISTRICT.—The Counties of Boone, Lake and McHenry.

Senate....	Republican	.....	Albert J. Olson—O. P.	Woodstock.
	Democratic	....S—	William Desmond, Sr.	Woodstock.
	Prohibition	....S—	W. H. Robinson	Woodstock.
	Socialist	.....	Robert Giese	Waukegan.
House....	Republican	....S—	Edward D. Shurtleff	Marengo.
			S—James H. Vickers	Harvard.
	Democratic	.....	Thomas E. Graham	Ingleside.
	Prohibition	....S—	August W. Meyer	Barrington.
	Socialist	.....	Barney P. Walters	Belvidere.

NINTH DISTRICT.—Parts of the Fourth, Fifth and Twelfth Wards, Chicago.

House....	Republican	....S—	David E. Shanahan	115 S. Dearborn St.
	Democratic	.....	Rudolph Stoklasa	2247 S. Kedzie Ave.
			Robt. J. Mulcahy	3124 Archer Ave.
	Socialist	.....	Andrew Olson	2709 W. 22d St.

TENTH DISTRICT.—The Counties of Ogle and Winnebago.

Senate....	Republican	....S—	Henry Andrus—O. P.	Rockford.
	Democratic	.....	Floyd J. Tilton	Rochelle.
	Prohibition	....S—	Liberty Walkup	Rockford.
	Socialist	.....	Samuel E. Kelley	Rochelle.
House....	Republican	.....	John A. Atwood	Stillman Valley.
			Andrew J. Lovejoy	Roscoe.
	Democratic	.....	John Coleman	Rochelle.
	Prohibition	.....	Charles A. Malm	Rockford.
	Socialist	.....	Oscar H. Ogren	Rockford.

ELEVENTH DISTRICT.—The Thirty-Second Ward and part of the Thirty-First Ward, Chicago.

House....	Republican	....R—	Henry D. Fulton	444 Englewood Ave.
			S—Otto Miller	7757 Green St.
	Democratic	....S—	Frank J. Ryan	6828 Bishop St.
			S—Henry F. Schuberth	7832 Lowe Ave.
	Prohibition	....S—	F. W. Stafford	6923 S. Halsted St.
	Socialist	.....	Chas. Harold	3544 W. 63d St.

TWELFTH DISTRICT.—The Counties of Carroll, Jo Daviess and Stephenson.

Senate....	Republican	.....	Charles W. Middlekauff	Lanark.
	Democratic	.....	Michael H. Cleary	Galena.
	Prohibition	.....	Joseph H. Keagle	Cedarville.
	Socialist	.....	Wm. H. McCall	Freeport.
House....	Republican	.....	Stephen Rigney	Red Oak.
			William D. Irwin	Hanover.
	Democratic	....S—	Martin J. Dillon	Galena.
			R. R. Thompson	Kent.
	Prohibition	.....	Theodore F. Ellis	Winslow.
	Socialist	.....	Shep H. Zimmerman	Freeport.

* Senator Brown introduced and fathered the optometry bill at the last session. He should be defeated for re-election.

THIRTEENTH DISTRICT.—The Eighth and Thirty-third Wards and parts of the Seventh Ward, Chicago, and part of the town of Calumet, all in the County of Cook.

House....Republican	John A. Swanson.....	6842 Washington Ave.
	Benton F. Kleeman.....	11444 Prairie Ave.
Democratic	Timothy Dunne.....	2906 E. 78th St.
	John W. Riley.....	7341 Champlain Ave.
	S—Fred C. Lockwood.....	718 E. 90th St.
Prohibition	S—Chas. H. Doolittle.....	7111 Jugleside Ave.
Socialist	Seymour Stedman.....	1108 E. 66th St.

FOURTEENTH DISTRICT.—The Counties of Kane and Kendall.

Senate....Republican	Thomas B. Stewart.....	Aurora.
Democratic	S—John Geiss.....	Batavia.
Prohibition	O. W. Beebe.....	Yorkville.
Socialist	Guy Underwood.....	Aurora.
House....Republican	Frank W. Shepherd.....	Elgin.
	Clifford A. Cherry.....	Aurora.
	S—Thaddeus J. Merrill.....	Aurora.
Democratic	Charles F. Clyne.....	Aurora.
Prohibition	A. P. Stebbins.....	Elburn.
	Nelson T. Morley.....	Yorkville.
	Nicholas L. Johnson.....	Batavia.
Socialist	A. J. Anderson.....	Elgin.

FIFTEENTH DISTRICT.—Parts of the Ninth, Tenth and Eleventh Wards, Chicago.

House....Republican	Thos. Curran	2023 S. Center Ave.
Democratic	Peter F. Smith.....	1608 S. Union St.
	S—Joseph O. Hruby.....	1806 S. Center Ave.
Socialist	Joseph Thomas	1618 Blue Island Ave.

SIXTEENTH DISTRICT.—The Counties of Livingston, Marshall, Putnam and Woodford.

Senate....Republican	Ira M. Lish.....	Saunemin.
Democratic	Christian Haase	Washburn.
Prohibition	S. J. White.....	Wenona.
House....Republican	S—H. T. Ireland	Washburn.
	Josiah Kerriek.....	Minonk.
Democratic	Michael Fahy	Toluca.
	S—Henry A. Foster.....	Fairbury.
Prohibition	Benjamin W. Tate.....	Pontiac.
	Clarence Christy	Ocoya.
	Ed. Folsom	Pontiac.

SEVENTEENTH DISTRICT.—The Nineteenth Ward and parts of the Ninth and Tenth Wards, Chicago.

House....Republican	S—Edward J. Smejkal.....	560 Bunker St.
Democratic	Tony Trimarco	723 Loomis St.
	S—John S. Burns.....	622 Blue Island Ave.
Socialist	A. Dubin	1135 S. Halsted St.

EIGHTEENTH DISTRICT.—The County of Peoria.

Senate....Republican	John Dailey	Peoria.
Democratic	Jefferson R. Boulware.....	Peoria.
Prohibition	S—Stephen Martin	Peoria.
Socialist	Charles P. Cook.....	Peoria.
House....Republican	Lucas I. Butts.....	Peoria.
	S—Ira J. Covey.....	Peoria.
Democratic	Thos. N. Gorman.....	Peoria.
Prohibition	George Belford	Princeville.
Socialist	Louis Bierman	Peoria.

NINETEENTH DISTRICT.—The Thirteenth and Thirty-Fourth Wards and part of the Twelfth Ward, Chicago, the Town of Riverside and part of the town of Cicero, all in the County of Cook.

House....Republican	S—Joseph C. Blaha.....	3736 W. 13th St.
	Eugene Worthing	4345 W. Adams St.
Democratic	John J. McLaughlin.....	3105 Washington Blvd.
	James C. Ilston.....	3910 W. Van Buren St.
	S—Robert H. Burns.....	1241 S. Avers Ave.
Prohibition	George P. Wiley.....	3842 Wilcox Ave.
	Wm. Berg	2630 W. Jackson Blvd.
Socialist	John Read	3942 Lexington St.

TWENTIETH DISTRICT.—The Counties of Grundy, Iroquois and Kankakee.

Senate....	Republican	.....	Edward C. Curtis.....	Grant Park.
	Democratic	....S—	Frank M. Crangle.....	Watseka.
	Prohibition	.....	W. A. Walley.....	Morris.
	Socialist	.....	Joseph Pomatto.....	South Wilmington.
House....	Republican	....R—	Frank F. Butzow.....	Loda.
			Israel Dudgeon.....	Morris.
	Democratic	.....	Daniel O'Connell.....	Kinsman.
	Prohibition	....S—	P. A. St. John.....	Onarga.
	Socialist	....S—	J. P. Miller.....	Ridgeville.

TWENTY-FIRST DISTRICT.—The Fourteenth Ward and parts of the Seventeenth and Thirty-Fifth Wards, Chicago.

House....	Republican	....S—	Alfred C. Anderson.....	1759 W. Huron St.
			Edwin T. Farrar.....	748 N. 53d Ave.
	Democratic	....S—	Benjamin M. Mitchell.....	3246 Washington Blvd.
	Prohibition	.....	Walter W. Guy.....	725 N. Willow Ave.
	Socialist	.....	H. W. Harris.....	526 N. Avers Ave.

TWENTY-SECOND DISTRICT.—The Counties of Edgar and Vermilion.

Senate....	Republican	.....	Martin B. Bailey.....	Danville.
	Democratic	.....	Wm. M. Bines.....	Ridgefarm.
	Prohibition	....S—	Philip B. Honnold.....	Kansas.
	Socialist	....S—	John Joseph Kcon.....	Danville.
House....	Republican	.....	William P. Holaday.....	Georgetown.
			Isaac N. Coolley.....	Brocton.
	Democratic	.....	Geo. W. Myers.....	Paris.
	Prohibition	.....	C. C. Griffith.....	Danville.
	Socialist	.....	Peter N. Christenson.....	Grape Creek.

TWENTY-THIRD DISTRICT.—The Fifteenth Ward and parts of the Sixteenth and Thirty-Fifth Wards, Chicago, and part of the town of Cicero, all in the County of Cook.

House....	Republican	.....	George A. Miller.....	Oak Park.
			Carl Bloomberg.....	5918 W. Chicago Ave.
	Democratic	....S—	Joseph Strauss.....	1432 N. Robey St.
			Geo. R. Bruce.....	1419 N. Ridgeway Ave.
	Prohibition	.....	J. G. Scovern.....	1447 N. Fairfield Ave.
	Socialist	.....	Christian M. Madsen.....	3328 Beach Ave.

TWENTY-FOURTH DISTRICT.—The Counties of Champaign, Moultrie and Piatt.

Senate....	Republican	.....	Henry M. Dunlap—O. P....	Savoy.
	Democratic	.....	Raymond D. Meeker.....	Sullivan.
	Prohibition	....S—	Davis Willson.....	Urbana.
	Socialist	....S—	C. V. Walls.....	Cerro Gordo.
House....	Republican	....S—	Joseph Carter.....	Champaign.
			William F. Burres.....	Urbana.
	Democratic	....S—	Thomas M. Lyman.....	Champaign.
			Francis E. Williamson.....	Urbana.
	Prohibition	.....	Lovell B. Pickerill.....	Urbana.
	Socialist	.....	Wiley Burk.....	Champaign.

TWENTY-FIFTH DISTRICT.—The Twenty-Seventh and Twenty-Eighth Wards, Chicago.

House....	Republican	....S—	Charles G. Hutchinson.....	3534 McLean Ave.
			Charles L. Fieldstack.....	4016 Syracuse Ave.
	Democratic	....S—	Fred F. Schulz.....	2627 N. Kedzie Ave.
			Edward J. Costello.....	3055 Palmer Square.
	Prohibition	.....	M. I. Underwood.....	2500 N. Artesian Ave.
	Socialist	.....	Jos. M. Mason.....	3037 N. Spanlding Ave.

TWENTY-SIXTH DISTRICT.—The Counties of Ford and McLean.

Senate....	Republican	....S—	Frank H. Fnuk.....	Bloomington.
	Democratic	....S—	J. Wallace Dunnan.....	Paxton.
	Prohibition	....S—	L. A. Vasey.....	LeRoy.
	Socialist	.....	Fred B. Merriman.....	Bloomington.
House....	Republican	....S—	W. F. Mottier.....	Gibson City.
			William Rowe.....	Saybrook.
	Democratic	.....	Frank Gillespie.....	Bloomington.
	Prohibition	.....	Henry K. McMackin.....	Saybrook.
			John B. Brown.....	Bloomington.
	Socialist	.....	J. M. Bennington.....	Bloomington.

TWENTY-SEVENTH DISTRICT.—The Eighteenth Ward and parts of the Sixteenth and Seventeenth Wards, Chicago.

House....	Republican	S—Albert Rostenkowski	1261 Noble St.
	Democratic	Joseph Pitlock	1308 Crittenden St.
		James M. Donlan	954 W. Madison St.
	Prohibition	Chas. H. Mortimer	121 N. May St.
	Socialist	E. A. Hannenberg	616 W. Madison St.

TWENTY-EIGHTH DISTRICT.—The Counties of DeWitt, Logan and Macon.

Senate....	Republican	Edwin C. Perkins	Lincoln.
	Democratic	Willis R. Shaw	Decatur.
	Prohibition	J. W. Eckman	Decatur.
	Socialist	S—Jas. J. Meagher	Clinton.
House....	Republican	Frank E. Harrold	Clinton.
		William McGinley	Decatur.
	Democratic	Cyrus J. Tucker—O. S.	Decatur.
		William W. McCormick	Emden.
	Prohibition	D. H. Henshie	Decatur.
	Socialist	John Donath	Lincoln.

TWENTY-NINTH DISTRICT.—Parts of the Twenty-First and Twenty-Second Wards, Chicago.

House....	Republican	Harry S. Holmberg	921 Larrabee St.
		Elmer L. Williams	159 Locust St.
	Democratic	Patrick J. Sullivan	210 Whiting St.
		S—James H. Farrell	1147 Wells St.
	Prohibition	Albert P. Ford	606 St. Clair St.
	Socialist	Vincent Verde	1019 Townsend St.

THIRTIETH DISTRICT.—The Counties of Brown, Cass, Mason, Menard, Schuyler and Tazewell.

Senate....	Republican	John H. Shade	Pekin.
	Democratic	S—Walter I. Manny	Mt. Sterling.
	Prohibition	S—William Langston	Forest City.
	Socialist	Michael Schantz	Pekin.
House....	Republican	S—Homer J. Tice	Greenview.
	Democratic	A. M. Foster	Rushville.
		S—William M. Groves	Petersburg.
	Prohibition	S—John H. Everitt	Mason City.
	Socialist	W. L. Heberling	Ilavana.

THIRTY-FIRST DISTRICT.—Parts of the Twenty-First, Twenty-Second, Twenty-Third and Twenty-Fifth Wards, Chicago.

House....	Republican	S—Franklin S. Catlin	451 Belden Ave.
		S—Harry L. Shaver	6347 Winthrop Ave.
	Democratic	S—William McKinley	4053 Sheridan Rd.
		S—Frank J. Seif, Jr.	1533 Orchard St.
	Prohibition	Chas. B. Hull	665 Cornelia Ave.
	Socialist	Charles Roux	1427 Sedgwick St.

THIRTY-SECOND DISTRICT.—The Counties of Hancock, McDonough and Warren.

Senate....	Republican	Isaac M. Martin	LaHarpe.
	Democratic	William A. Compton	Macomb.
	Prohibition	Arnold D. Brington	Monmouth.
	Socialist	Charles Peterson	Monmouth.
House....	Republican	Henry Terrill	Colchester.
		John R. Camp	Bushnell.
	Democratic	John Huston	Blandinsville.
		Robert A. Elliott	Monmouth.
	Prohibition	William F. Aleshire	Plymouth.
	Socialist	J. H. Shinnin	Monmouth.

THIRTY-THIRD DISTRICT.—The Counties of Henderson, Mercer and Rock Island.

House....	Republican	S—Charles A. Clark	Sherrard.
		Thomas Campbell	Rock Island.
	Democratic	S—Everett L. Werts	Oquawka.
	Prohibition	S—B. L. Christy	Viola.
	Socialist	Isaac Edwards	Sherrard.

THIRTY-FOURTH DISTRICT.—The Counties of Clark, Coles and Douglas.

Senate....	Republican	John R. Hamilton.....	Mattoon.
	Democratic	John Ervin.....	Tuscola.
	Prohibition	J. A. Hight.....	Cassey.
	Socialist	Marx Thode.....	Mattoon.
House....	Republican	William T. Hollenbeck.....	Marshall.
		S—D. B. Miller.....	Cassey.
	Democratic	Polk B. Briscoe.....	Westfield.
		Edward F. Poorman.....	Mattoon.
	Prohibition	D. N. Boyce.....	Tuscola.
	Socialist	S—S. V. Hill.....	Mattoon.

THIRTY-FIFTH DISTRICT.—The Counties of Lee, DeKalb and Whiteside.

House....	Republican	Albert T. Tourtillott.....	Dixon.
		R—Alfred N. Abbott.....	Morrison.
Democratic		John P. Divine.....	Dixon.
	Prohibition	Robert C. Adams.....	Erie.
		Alfred M. Abbott.....	Morrison.
	Socialist	J. B. Stackpole.....	Dixon.

THIRTY-SIXTH DISTRICT.—The Counties of Adams, Calhoun, Pike and Scott.

Senate....	Republican	Ray N. Anderson.....	Pittsfield.
	Democratic	Campbell S. Hearn.....	Quincy.
	Prohibition	Lucien Cover.....	Quincy.
	Socialist	J. H. Hanlay.....	Quincy.
House....	Republican	S—George H. Wilson.....	Quincy.
	Democratic	William H. Hoffman.....	Quincy.
		Edwin T. Strubinger.....	El Dara.
	Prohibition	S—William S. Wilson.....	Hardin.
	Socialist	Joseph Bagby.....	Pearl.

THIRTY-SEVENTH DISTRICT.—The Counties of Bureau, Henry and Stark.

House....	Republican	Randolph Boyd.....	Galva.
		Clayton C. Pervier.....	Sheffield.
Democratic		S—Frank W. Morrasy.....	Sheffield.
		John P. Code.....	Bradford.
	Prohibition	S—William F. Steers.....	Tampico, R. F. D. No. 2.
	Socialist	James W. Connery.....	Kewanee.

THIRTY-EIGHTH DISTRICT.—The Counties of Green, Jersey, Macoupin and Montgomery.

Senate....	Republican	George L. Tipton.....	Girard.
	Democratic	Stephen D. Canaday.....	Hillsboro.
	Prohibition	James M. Harris.....	Jerseyville.
	Socialist	Edward A. Wieck.....	Staunton.
House....	Republican	S—S. Elmer Simpson.....	Carrollton.
	Democratic	William A. Hubbard.....	Carrollton.
		Henry A. Shephard.....	Jerseyville.
	Prohibition	Alvah Dawson.....	Roodhouse.
	Socialist	A. C. Schneider.....	Staunton.

THIRTY-NINTH DISTRICT.—County of La Salle.

House....	Republican	O. E. Benson.....	Ottawa.
		William M. Seanlan.....	Peru.
Democratic		Lee O'Neil Browne.....	Ottawa.
		William F. McNamara.....	LaSalle.
	Prohibition	S—Charles T. Farrell.....	Marseilles.
	Socialist	George North Taylor.....	Streator.

FORTIETH DISTRICT.—The Counties of Christian, Cumberland, Fayette and Shelby.

Senate....	Republican	Charles T. Wade.....	Farina.
	Democratic	F. Jeff Tossey.....	Toledo.
	Prohibition	S—S. M. Sheldon.....	Sharpsburg.
	Socialist	S—H. Middelworth.....	Cowden.
House....	Republican	Walter M. Province.....	Taylorville.
	Democratic	Arthur Roe.....	Vandalia.
		John C. Richardson.....	Edinburg.
	Prohibition	S—P. G. Ludwig.....	Moweaqua.
	Socialist	Math Hotniz.....	Pana.

FORTY-FIRST DISTRICT.—The Counties of Du Page and Will.

House....	Republican	James H. Alexander.....	Lockport.
		S—William R. McCabe.....	Lockport.
Democratic		S—Bernard L. Kelly.....	Joliet.
		S—Michael F. Hennebry.....	Wilmington.
Prohibition		Jonas G. Brooks.....	Wheaton.
		James H. Alexander.....	Lockport.
Socialist		Claus A. Eklund.....	Joliet.

FORTY-SECOND DISTRICT.—The Counties of Clay, Clinton, Effingham and Marion.

Senate....	Republican	S—Hervey O. Jones.....	Carlyle.
	Democratic	S—F. C. Campbell.....	Xenia.
	Prohibition	S—Luke Floyd.....	Effingham.
	Socialist	George Goodall.....	New Baden.
House....	Republican	Robert S. Jones.....	Flora.
	Democratic	S—Walter E. Rinehart.....	Effingham.
		S—Fred J. Koch.....	New Baden.
	Prohibition	Frank Miller.....	Shumway.
	Socialist	Joseph Globig.....	Beckemeyer.

FORTY-THIRD DISTRICT.—The Counties of Fulton and Knox.

House....	Republican	Edward J. King.....	Galesburg.
		S—W. S. Jewell.....	Lewistown.
	Democratic	E. W. Duvall.....	Lewistown.
	Prohibition	Charles E. Dunlevy.....	Lewistown.
	Socialist	Homer Whalen.....	Canton.

FORTY-FOURTH DISTRICT.—The Counties of Jackson, Monroe, Perry, Randolph and Washington.

Senate....	Republican	S—Samuel E. Harwood.....	Carbondale.
	Democratic	Kent E. Keller.....	Ava.
	Prohibition	S—James M. Temple.....	Sparta.
	Socialist	L. T. Phillips.....	Nashville.
House....	Republican	S—Judson E. Harriss.....	DuQuoin.
		William Stevenson.....	Tilden.
	Democratic	James M. Etherton.....	Carbondale.
		S—A. H. Cohlmeier.....	Nashville.
	Prohibition	William Quigley.....	Vergennes.
		Fred Deisburg.....	DuQuoin.
	Socialist	Thomas Lceman.....	Murphysboro.

FORTY-FIFTH DISTRICT.—The Counties of Morgan and Sangamon.

House....	Republican	Thomas E. Lyon.....	Springfield.
		William J. Butler.....	Springfield.
	Democratic	S—James F. Morris.....	Springfield.
		S—James M. Bell.....	Rochester.
	Prohibition	John R. Golden.....	Springfield.
	Socialist	Frank Joseph Esper.....	Riverton.

FORTY-SIXTH DISTRICT.—The Counties of Jasper, Jefferson, Richland and Wayne.

Senate....	Republican	John Lynch.....	Olney.
	Democratic	W. Duff Piercy.....	Mt. Vernon.
	Prohibition	Green Archibald.....	Cisne.
	Socialist	Jesse Stibbs.....	Olney.
House....	Republican	Charles L. Wood.....	Keens.
		S—George B. Welborn.....	Woodlawn.
	Democratic	John M. Rapp.....	Fairfield.
		R. J. Kasserman.....	Newton.
	Prohibition	Edgar F. Johnson.....	Newton.
	Socialist	Owen Fagan.....	Olney.

FORTY-SEVENTH DISTRICT.—The Counties of Bond and Madison.

House....	Republican	R—Norman G. Flagg.....	Moro.
		J. G. Bardill.....	Highland.
	Democratic	S—Ferdinand A. Garesche.....	Madison.
		William Dickman.....	Edwardsville.
Prohibition		Elijah N. Groce.....	Upper Alton.
		Fred Durr.....	Greenville.
		Jonathan Seaman.....	Greenville.
	Socialist	M. E. Kirkpatrick.....	Granite City.

FORTY-EIGHTH DISTRICT.—The Counties of Crawford, Edwards, Hardin, Lawrence, Wabash and White.

Senate....	Republican	Thomas B. Wright, Jr.....	Mt. Carmel.
	Democratic	S—J. A. Womack, M.D.....	Equality.
	Prohibition	S—H. L. Bozeman.....	Carmi.
	Socialist	G. B. Black.....	Norris City.
House....	Republican	James A. Watson.....	Elizabethtown.
		Thomas W. Hay.....	Carmi.
	Democratic	Charles L. Scott.....	Grayville.
		William E. Finley.....	Bridgeport.
	Prohibition	Paul W. Cox.....	Robinson.
	Socialist	Berry Warren.....	Norris City.
		John Johnson.....	Not known.

FORTY-NINTH DISTRICT.—The County of St. Clair.

House....	Republican	.....John L. Flannigen.....	East St. Louis.
		S—Fred Keck	Belleville.
	Democratic	.....Charles A. Karch.....	Belleville.
		Lewis S. McWilliams.....	East St. Louis.
	Prohibition	.....Edwin W. Walker.....	Marissa.
	Socialist	.....Adolph Germer	Belleville.

FIFTIETH DISTRICT.—The Counties of Alexander, Franklin, Pulaski, Union and Williamson.

Senate....	Republican	.....W. O. Potter.....	Marion.
	Democratic	.....D. T. Woodward.....	Benton.
	Prohibition	.....A. J. Dougherty.....	Mound City.
	Socialist	.....U. S. A. Gadbois.....	Villa Ridge.
House....	Republican	.....R. D. Kirkpatrick.....	Benton.
		Charles Curren	Mound City.
	Democratic	.....George W. Crawford.....	Anna.
		James H. Felts.....	Marion.
	Prohibition	...R—George L. DuBois.....	Cobden.
	Socialist	.....John Conant	Villa Ridge.

FIFTY-FIRST DISTRICT.—The Counties of Hamilton, Johnson, Massac, Pope and Saline.

House....	Republican	.....George B. Baker.....	McLeansboro, R. F. D. No. 3.
		R—Elwood Barker	McLeansboro.
	Democratic	.....T. W. Biggerstaff.....	McLeansboro.
		W. C. Kane.....	Harrisburg.
	Prohibition	.....Charles W. Henderson.....	Harrisburg.
	Socialist	.....Bert Tavender	Harrisburg.

Correspondence

WHO SAID HOMEOPATHS WERE MISREPRESENTED?

To the Editor:—Some time ago I saw a circular letter issued by a sectarian medical college, calling on all its alumni to rally to the cause, and dwelling on the vital necessity of keeping alive the fires of sectarian medicine. As an evidence of prosperity the college directed attention to the fact that it had absorbed "The Chicago Medical College" and "The Southwestern Medical College," when as a matter of truth it has taken under its wing the Chicago Homeopathic Medical College and the Southwestern Homeopathic Medical College of Louisville. The omission of the word "Homeopathic" was doubtless a mere typographical error, which may easily be corrected in a subsequent publication. However, in a sectarian propaganda careful proofreading is a matter of the first importance.

PHYSICIAN.

ILLINOIS STATE MEDICAL SOCIETY

OFFICE OF THE PRESIDENT

QUINCY, ILL., July 17, 1912.

To the Editor:—I desire to call the attention of the profession in the State of Illinois to what was said by the President at the Springfield meeting in regard to an increase of membership (see June JOURNAL, page 740). The Council at a meeting held in Chicago, June 1st, was of the opinion that the society could not afford to comply with the request of the President in putting organizers in the field, and sending the JOURNAL for the current year to every registered physician, for the reason "that the expense would be too great for the uncertain results in obtaining new members." We should not be discouraged, but use extra efforts to reach the goal. If the secretaries have no record of the registered physicians

in their respective counties, I would suggest that they write the secretary of the State Board of Health for a copy of the official Register of the legally qualified physicians (April number). In this register, the physicians will be found grouped by counties; the name of each physician in your county can be readily found and compared with your roster. I hope the secretaries will take up this matter of membership with their county societies and get into this missionary work.

Yours very truly, L. H. A. NICKERSON.

Book Notices

FALSE MODESTY, THAT PROTECTS VICE BY IGNORANCE. By E. B. Lowry, M.D., Chicago. Forbes & Company, 1912. Price 50 cents.

This is one of the popular volumes so many of which are making their appearance and doing so much good. Dr. Lowry is certainly doing noble work for humanity in writing books on subjects which are too often neglected and ignored and which leads to so much suffering and crime. This work should find a place in every household.

THE PRACTICAL MEDICINE SERIES. Comprising ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School.

Volume I.—General Medicine, edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty, of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School.

Volume II.—General Surgery, edited by John B. Murphy, A.M., M.D., LL.D., Professor of Surgery in the Northwestern University. Attending Surgeon and Chief of Staff of Mercy Hospital, Wesley Hospital, St. Joseph's Hospital and Columbus Hospital. Consulting Surgeon to Cook County Hospital and Alexian Brothers' Hospital, Chicago, Illinois. Series 1912. Chicago. The Year Book Publishers, 180 N. Dearborn St. Price of the series of ten volumes, \$10.00.

Two volumes of this series of valuable hand-books have made their appearance for the year 1912, viz., General Medicine, by Drs. Billings and Salisbury, and General Surgery, by Dr. J. B. Murphy. The price of the volumes singly, varies from \$1.50 to \$2, and the names of the authors is sufficient proof that the contents will be found of great value. The complete edition of ten volumes is an education in itself every year.

LABORATORY METHODS. By Drs. Williams and Williams.

One of the authors of this hand-book of 200 pages is Dr. B. G. R. Williams, Paris, Edgar County, Illinois, a member of our State Medical Society, assisted evidently by his brother. The book is published by the C. V. Mosby Co., and sells for \$2.00. The aim of the Drs. Williams appears to be the laudable one of making laboratory methods so simple and inexpensive that the general practitioner may give his patients and himself the benefit of modern methods of diagnosis. Certainly this is a "consummation devoutly to be wished," and we recommend this volume to all our readers.

THE CARE OF THE HAIR AND SKIN. By William Allen Pusey, A.M., M.D., Chicago. D. Appleton & Co. New York and London. Price \$1.00.

Dr. Pusey's popular hand-book is one which can be highly recommended, because it puts accurate professional instruction in a popular form, and makes it available for the general reader. Many physicians are placing such volumes as these in the hands of their patients in order that the false teachings of the almanac and patent medicine circulars may be refuted, and common sense and practice introduced in their stead. Dr. Pusey has carried out this idea very happily in his little hand-book.

COUNTY AND DISTRICT SOCIETIES

ALEXANDER COUNTY

The Alexander County Medical Society held its regular monthly meeting in the Commercial Club Rooms, in Cairo, June 20. A large percentage of the members was present. Dr. J. W. Dunn presented a patient whom he had recently operated on for cataract in each eye. The operation on the left eye was for a mature cataract, and was done after the classical method of opening the capsule and the doing of a small iridectomy. The cataract in the right eye was removed after the Smith-Indian method with a large iridectomy. It appeared that the results in both eyes would be good, and the case was presented in order to contrast the two methods.

Dr. H. A. Davis gave a lecture on the heart. He used a calf's heart to demonstrate his different points. He also presented a patient that apparently had a deficiency about every valve of his heart. The man was a rheumatic. The doctor also reviewed the pathologic condition of the heart and discussed murmurs and sounds and their relation to each other.

Dr. W. F. Grinstead reported as delegate to the recent Springfield meeting of the State Medical Society. His report was very interesting and covered the main business of the convention.

Our society is in a flourishing condition.

The Alexander County Medical Society held its regular monthly meeting at the Commercial Club Rooms, July 18. Interesting clinical cases were presented by Drs. Grinstead and Carey.

JAMES W. DUNN, Secretary.

BROWN COUNTY

The Brown County Medical Society held its July meeting Wednesday, July 3, 1912, at the office of Dr. J. G. Ash, Hersman, Ill., with the president, Dr. D. W. Owens, in the chair. Members present were: Drs. Ash, Owens, Dearborn, Allworth, McGann, Thompson, Lucas and Parker. Dr. Nickerson, of Quincy, the honored state president, was present as our guest. After clinical reports by Drs. Ash, Allworth and Parker, Dr. Nickerson was presented to the society, and read an interesting and profitable paper on "Summer Diarrhea," which was ably discussed by Drs. Thompson, Allworth, Lucas and Owens. Dr. Nickerson gave a short address on the desirability and methods of increasing the membership in the county and state societies, stating that Illinois is now second in membership only to New York. This was one of the most beneficial and pleasant meetings in the history of our society, aside from the excellent scientific program. Drs. Ash and Owens as hosts to the members and their wives were ably assisted by Mesdames Ash and Owens who gave a delicious five course dinner, and it is hardly necessary to say that this elegant banquet was effectively discussed by all present. A vote of thanks was tendered Dr. Nickerson for his excellent paper, and to our hosts for their royal entertainment.

The societies' next meeting is to be held at Ripley, in a shady grove on the banks of the Lamoin River, Wednesday, Oct. 2. The ladies are to attend this meeting also, and a pleasant part of the program is to be a picnic dinner.

WM. PARKER, Secretary.

COOK COUNTY

JOINT MEETING OF THE WEST SIDE BRANCH OF THE CHICAGO MEDICAL SOCIETY AND THE CHICAGO MEDICAL SOCIETY

Meeting, Wednesday Evening, April 17, 1912

Held April 17, 1912, with Dr. W. T. Mefford in the chair, at the Northwestern University Building.

Dr. A. E. Sterne, Indianapolis, Ind., was then presented and presided over the meeting.

Dr. H. A. Tomlinson, St. Peter, Minn., read a paper on "The Conditions Out of Which Insanity Grows."

Dr. S. I. Schwab, St. Louis, Mo., presented "Abnormal States in Otherwise Normal Individuals."

Dr. H. D. Singer, Kankakee, Ill., "Dementia Præcox."

DISCUSSION

Dr. Frank P. Norbury, Springfield, Ill.: The subjects covered by the speakers of the evening have been presented in such a comprehensive manner that little remains to be said. However, I would like to suggest, regarding the paper of Dr. Tomlinson, that of the contributory causes underlying mental disease (congenital causes) mentioned by him, the consideration of the basic instincts and their mental reactions are especially important. This is emphasized in the study of fear reactions so frequently and persistently present, not only in well-defined psychoses, but also in borderland cases, notably in psychasthenic states.

Fears represent the manifestation of the primary instinct of self-preservation with the accompanying emotions of terror. A study of these varied reactions occurring in varying degrees of intensity and persistence suggest to us the need of more knowledge of the primary instincts of man, as essential contributory information in the study of a case.

Again, the study of heredity in the light of modern mendelian methods opens an intensely interesting and profitable field for inquiry. Such knowledge is of social value, of great economic value and clinical value in the individual study of our cases. The practical value to clinicians in the study of instincts and heredity is apparent, and their further value to the state in the great social study of the emigrants coming to this country will in time be appreciated. Burbank would have us believe that the grouping of all people of all nations in this country is to be the making of a race, the best the world has ever seen. The working out of the fundamental instincts of man, of which emigration is but that gregarious instinct, really has an optimistic forecast for the future welfare of mankind. Our modern civilization, after all, is not the worst in the history of the world. The mental diseases, degeneration, crime, etc., while factors needing careful study and consideration, are more apparent than real dangers to the ultimate possibilities of civilization.

Dr. L. Harrison Mettler: One point brought out in the paper is, in my opinion, a most important one, namely, that these unstable children should be examined always very carefully along psycho-neurologic lines. The greatest possible pains should be taken to determine whether the child is really a morbid child and pathologically defective or is merely the result of ignorance, stupidity, and false training on the part of the parents. While I recognize the importance of heredity and congenital factors in the production of the defectiveness of these children to a very large extent, the impression is growing with me, nevertheless, that much of this defectiveness is the result of erroneous education and wretched environment. Some one has well said that if one-half of our public schools to-day were transformed into schools of compulsory education for parents, the mass of children would be better off than they are to-day with all of the schools given over to their use. Mental development, as Prof. James has put it, is dependent very largely upon the golden rule of habit. It is habit that underlies character and habit formation is less a matter of heredity and of school life than

it is of early parental training. If mad habits, mental and physical, are formed, the character is warped, and the individual has all the appearances of a defective. In some instances only the most searching psychoanalysis will differentiate such a condition from one of actual pathologic deficiency.

Some years ago, when I was in general practice, I was told by one of my patients, a man of apparent intelligence and of considerable prominence in the business world, that he had such a dread of his boy becoming a molly-coddle that in order to let him see the world, he gave him, every once in a while, a ten dollar bill and told him to go down town and not come home until the next morning. Think for a moment of the probable product of such a system of education! Under such tutelage it would be a miracle if the child did not develop a most defective character, to say nothing of the possibilities of venereal infection. Sexual perversions, criminal and anti-social tendencies, and other manifestations of inability to lead the highest type of communal life are not always the outgrowth of congenital inadequacies. Nor can any such manifestations be waived aside, without the most careful psychoanalysis, as merely the result of an inherited mental instability. Such a ready and easy solution is already being too widely adopted, to the weakening of personal responsibility and the undermining of our American citizenship.

In one of our courts where mental weakness and instability were being offered in defence of a criminal act, it was testified that the prisoner had violently and outrageously rushed at the stenographer in his office because she had moved something from one side to the other of his desk during his absence. His act was brutal, but that it was not wholly the act of a madman, and therefore excusable, was shown when upon cross-examination, it was learned that he had requested the girl not to do that many times during the day. His act was almost criminal and deserved the severest punishment but it was not to be excused upon any ground of mental weakness and instability.

Psychoanalysis will do a great deal for us in the differentiation of defectiveness in children and adults.

Dr. Julius Grinker: Dr. Tomlinson has given us many valuable points, but he did not cover every etiologic factor in the production of insanity. This may be explained by our great ignorance of the real causes of insanity. The old discussion on heredity and environment, as to which of the two has the greater influence in the production of insanity, is still going on. Dr. Tomlinson has emphasized the importance of heredity, but did not put sufficient stress on the environmental factors. I firmly believe that environment is as important, if not more so, than heredity.

In any intelligent inquiry of what may have caused a specific case of insanity we reach the conclusion that though there may have been some instability on the part of the individual, the environmental factors predominated in throwing the patient over the borderline. When we consider what our strenuous life means to-day, what ravages alcoholism and venery are causing, we wonder that there is not more insanity. We cannot hold heredity responsible for everything. Normal individuals with good heredity and living under conditions incompatible with normal mental growth, may, during adolescence, develop insanity.

Many of the points which Dr. Tomlinson brought out fit very well the dementia præcox group of cases. Such patients are in a sense defectives. Having but little mental capital to start with, they become bankrupt early in life and nothing can retard the progress of their mental death.

But these are not the only forms of insanity. Many of them, probably the majority, are caused by toxins and by unsuitable environment. The prevention of insanity is largely a sociologic question, backed, of course, by a proper application of eugenics.

Dr. Peter Bassoe: I want to express my gratitude to Dr. Singer for bringing before us in such an able manner the new "psychogenic" conception of dementia præcox. I believe that it will help us to a better understanding of this important mental disease. Everyone who has gone through an institution for the insane

will realize its importance as the great bulk of the chronic inmates are suffering from dementia præcox. While, perhaps, the percentage of admissions for dementia præcox is not so great in proportion we must bear in mind that these patients stay there; they do not die of the disease, nor are they cured. The general paretics die in a few years; the manic-depressives are cured in a short time, but the dementia præcox patients stay there.

I wish that all of you would read one of the papers of Adolŕ Meyer to which Dr. Singer referred, and one of the shortest papers is the best. I believe that the title is: "What do Histories of Cases of Dementia Præcox Teach us in Regard to Psychoprophylaxis in Childhood?" The paper was written for teachers and appeared in the "Psychologie Clinie" for 1908. Dr. Meyer relates a few cases of school children in New York, and brings out the features first noticed by the teachers and the parents. These cases show well how the disease develops as the result apparently, or at least following evidence of a distinct perversion of instincts and a faulty reaction to difficulties. Instead of facing difficulties, the child dodges them, because they are too great for it. The child has been called on to do things which it cannot do. Therein lies the hope that we may get a real prophylaxis; that we may steer these children along paths in which they will not be put to a too great strain.

We have the familiar influence of the unstable child coming to the age of puberty and falling into religious reveries. If this condition goes on, the individual becomes more and more serious and indulges in all kinds of pseudo-philosophic contemplation. If such a young person is not properly guided, he is likely to take up the study for the ministry, and very soon becomes so involved that he is hopelessly lost.

It has been my misfortune to examine several such young men. Talking with their relatives and going over the symptoms of the patient, it seemed to me that the whole thing possibly might have been prevented. We all know persons who have gone through such stages and got out of them.

I think it is rather unfortunate that this disease has the name dementia præcox, because while the term dementia fits a great many things, there is an essential difference between the mental deterioration of dementia præcox and the mental condition of senile dementia, the dementia of arteriosclerosis and other organic brain disease.

The paretic dement and the senile dement do not think or think little, while the dementia præcox patient does think and thinks all the time and intensely but is entirely out of touch with his surroundings.

I am glad that Dr. Singer brought this subject before us in such an able manner.

Dr. O. A. King: I was a little unprepared to receive a few of the expressions in the paper. As to the origin of dementia præcox being venereal or a failure to adjust oneself to environment, was so far removed from my conception of the disease, a conception gained through many years of every-day observation of cases of dementia præcox, that I really cannot express anything but surprise that men who are in daily contact with the disease should arrive at a conclusion of that sort. Everyone knows that everything that comes into Freud's field is based on a failure of sexual adjustment. Meyer seems to follow in the same direction, and even goes so far as to assume that something very detrimental to the patient's consciousness has occurred to him in his sexual life, and so sweats the patient, as the policeman sweats the criminal, that he sweats the secret out of the patient and then proceeds to adjust the whole matter. Knowing that the patient is a little out of adjustment with himself until finally he is overthrown, to my mind is the most foolish thing possible.

This condition is not at all the first thing. We hear nothing of the failure of adjustment in the history. It goes right along until in a little while he falls into a condition of not thinking intensely or not thinking at all. It is true that he is not disoriented, but he ceases to think in an effective way. The course is downward. The prognosis as made by Kraepelin is from 8 to 12 per cent of recoveries

with young people in the strength of their lives. That means something more than a mere failure of adjustment, sexually or otherwise.

In the next place, the suggestion to include a rather large group of other maladies in the class of dementia præcox is a great mistake. It has been suggested that in some instances very great changes have taken place in consequence of infectious maladies occurring during the time of the dementia. That is true; infectious maladies have brought about a favorable change. Clouston years ago alluded to the fact that certain insanities were found to be favorably affected, even to the point of recovery, by certain intercurrent infections. He particularly mentioned erysipelas and crops of boils. Fifteen or more years ago it was shown experimentally that an animal ill with anthrax that was inoculated with erysipelas had the course of its disease tremendously modified, and that if the erysipelas was inoculated before the anthrax, the animal did not die. Such conditions have occurred all along.

More than half of all our patients of dementia præcox have recovered, and I do not mean recoveries in the sense usually referred to, but recoveries that left the patient in as good condition as before the attack of dementia præcox. That has been brought about by the effective treatment employed, more than anything else by the administration of the streptococcus toxins. That means that we have to do with a toxemia. The idea that there has been a failure of adjustment is wrong. That is a symptom of the disease. Years ago before dementia præcox and hebephrenia were put forth, we had all these things placed under the masturbational insanities, whether there was a masturbation or not. All insanities were supposed to rest on a sexual basis. Then there was the insanity of the puerperal state, of lactation, post-connubial insanity, and what not. We used to ask our gynecologic friends how it happened that if insanity in women was due to pelvic disease, that there were 10 per cent. more men than women patients. The homeopaths discovered that men's minds had their seat not in the pelvis, but in the rectum, and orificial surgery came into vogue.

We have in this proposition of dementia præcox the notion of failure of sexual adjustment. Freud brought us back to sexual matters after we had gotten pretty well clear of it.

Dr. Julius Grinker: I am glad that Dr. Schwab has brought out the point that in mental diseases we have not an entirely new psychology but merely an exaggeration of features normally present in the individual. He has gone into almost every phase of the subject and shown us that the rudimentary symptoms are already present in the normal individual. The doctor's paper was so exhaustive that not a word can be added to his excellent résumé.

Last week while speaking on dementia præcox, I anticipated that we shall have a classical paper on this subject by Dr. Singer. I think you will agree with me that my anticipation has been fulfilled. The doctor has covered the subject of dementia præcox in an admirable manner. The views he expresses are modern and logical. There is something about the new conception of the psychology of dementia præcox that does not appeal to the old-time practitioner, because the sexual element is given due consideration. There are still too many prudes in our profession, but their number is growing smaller.

Of course Dr. King cannot see how it is possible to have a functional element in dementia præcox as the patients do not get well, at least not those who are treated outside of the Lake Geneva Sanitarium. He maintains that the functional cases get well. The fact is that functional cases do not all get well and that dementia præcox is not a functional disease but merely has certain features in common with the functional disease "hysteria."

The difference between the "repressed complex" of hysteria and that of certain forms of dementia præcox is that in the former the unpleasant complex has been repressed, pushed into the unconscious, but may by psychoanalysis be brought into consciousness and then "ab-reacted," or removed from the patient, while this is impossible in dementia præcox, in which the complexes have become part of the præcox personality—they have become congealed or blocked and are not

removable. The psychology of a dementia præcox patient is not an entirely new psychology—it has merely taken on a different form: the “repressed complex” has become congealed and part of the individual. This explains why dementia præcox is not curable in more than 8 to 15 per cent. of the cases. Dr. King’s treatment and statistics of cases are entirely new and so counter to everything we know of this disease, that I cannot help viewing the statistics with suspicion and express doubt in the diagnosis.

Dr. A. E. Sterne, Indianapolis: I want to emphasize one thing; that we should recognize, in all its bearings, the existence of heredity and its relationship to environment. I believe that the medical profession is doing a lot of mischief, outside of medical circles, by unwarranted expressions along the lines of heredity. We must not forget that the laity is not educated up to our ideas of what we actually mean by heredity. They look at this thing in concrete fashion—we in the abstract. They subjectively; we objectively. The consequence is that many a man has gone insane because there had been a case of insanity in his family and he feared the insanity. Many a man has committed suicide because it was suggested to him that suicide was an hereditary taint. Whether it was fear of insanity or actual hereditary factors which finally caused the mental breakdown is a debatable question.

It is difficult to adjust these things in the mind of the laity, and I have always been very cautious, and I grow daily more cautious, to emphasize what I mean by heredity. I emphasize very acutely what I mean by environment and by education. After all, hereditary traits are along anatomic lines rather than physiologic lines. We inherit physical characteristics much more than mental characteristics. Insanities cannot come out of the air in some mystical fashion. An insane person is a sick person. The body is somewhere, somehow wrong. There is more to the mind than the mere expression of the sum total of the functions of the brain-cells in activity. It is also an expression of the sum total of the body functions in their influence on the brain.

Dr. H. Douglas Singer: I cannot enter in detail into Dr. King’s criticisms but I would like to emphasize one point. It is not sufficient to make “daily observations” of patients. That is what has led to the symptomatic classification we are trying to get away from now. It is the habit of searching into things which has led up to the present advance in our knowledge. One cannot draw conclusions from what one sees to-day unless one can get the facts as to what has gone before. One might live all his life with an insane individual and yet know little about his psychosis unless one knew what had gone before. These patients are in the main inaccessible and one has to do more than merely “observe” in order to get at the facts.

With regard to the problem of psychoanalysis which in hysteria results in recovery, Dr. Grinker said that we could not make analysis in dementia præcox. As a matter of fact such have been made. To say, however, that there is a “congealing or coagulation” is to express the facts by a word which is obviously merely a comparison and is in no sense an explanation.

Other sessions of the conference on mental diseases were held as follows in the red room, Hotel La Salle:

Morning Session, April 17, 1912

The Address of Welcome was delivered by Dr. W. J. Butler. The following papers were read:

“Clinical Reports of One Hundred Cases of Paresis and Serologic Findings,” Dr. K. S. West, Cleveland, Ohio.

“The Weil Cobra Venom Test in Paresis and Other Psychoses,” Dr. C. R. Bell, Elgin, Ill.

“The Effect of Specific Treatment on the Cerebrospinal Fluids,” Dr. W. F. Lorenz, Mendota, Wis.

“Infectious Psychoses,” Dr. H. P. Sights, Hopkinsville, Ky.

Afternoon Session, April 17, 1912

Dr. Frank Norbury, Springfield, Ill., chairman. The program was as follows:
 "Clinical Significance of Reflexes," Dr. T. B. Throckmorton, Cherokee, Iowa.

"Cases Illustrating a Curable Type of Insanity Occurring Around Puberty or Shortly Afterward, and of Which Dementia Præcox Could be Readily Made," Dr. H. W. Rhein, Philadelphia, Pa.

"Mental States as Symptoms of Organic Diseases of the Central Nervous System," Dr. C. D. Cramp, Ann Arbor, Mich.

"The Binet-Simon Intelligence Tests in Their Application to Defectives," Dr. Clara Town, Lincoln, Ill.

"Amentia," Dr. Mary E. Pogue, Lake Geneva, Wis.

"Psychiatry in Clinical Medicine and Surgery," Dr. C. H. Hughes, St. Louis, Mo.

Morning Session, April 18, 1912

Dr. H. A. Tomlinson, St. Peter, Minn., chairman. The following papers were read: "Prevention of Insanity," Dr. W. A. Evans, Chicago, Ill. "Rationalization of Mental Medicine," Dr. W. H. White, Washington, D. C. "The Status of Pathology in Psychiatry," Dr. Lewis J. Pollock, Kankakee, Ill. "Hyperthyroidism in Relation to Certain Psychoses with a Report of Cases in which Thyroidectomy was Performed with the Hope of Relieving the Mental and Physical Symptoms." Dr. Fred W. Terflinger, Logansport, Ind. "Exudative Cerebritis: Its Clinical Manifestations." Dr. Albert E. Sterne, Indianapolis, Ind.

Afternoon Session, April 18, 1912

Dr. Theo. Diller, Pittsburg, Pa., chairman. The program follows:

"The Origin of Nervousness in Children," Dr. Tom A. Williams, Washington, D. C. "Constitutional Inferiority," Dr. Chas. Read, Kankakee, Ill. "The Segregation and Treatment of the Feeble-Minded." Dr. John Punton, Kansas City, Mo. "Feeble-Minded and Epileptic." Dr. H. M. Cary, Pennhurst, Pa.

Evening Session, April 18, 1912

This was the lawyers' evening and the program consisted of the following papers. "The Need for Permanent Custodial Care for Juvenile Delinquents," Dr. Chas. Bernstein, Rome, N. Y. "The Menace to the Public of Imbeciles Living Outside Institutions," Dr. Theo. Diller, Pittsburg, Pa. "Criminal Insanity," Dr. C. H. Anderson, Menard, Ill. "Some Causative Factors of Criminality Found in Mental and Nervous Conditions," Dr. Wm. Healy, Winnetka, Ill.

RESOLUTIONS ADOPTED BY THE CONFERENCE ON MENTAL DISEASES
 AT THE HOTEL LA SALLE, APRIL 18, 1912

WHEREAS, The present conference has been of great interest and has proven that the subjects under discussion are of prime importance to the people and

WHEREAS, They should be aroused to the imminent need of united action in their own defence against the rapid increase of the defective classes; therefore be it

Resolved, That a similar meeting be held next year in Chicago; and be it further

Resolved, That the President of the Chicago Medical Society is hereby requested to invite at an early date a preliminary conference of the Presidents of the Chicago Medical Society, the Chicago Homeopathic Society, the Chicago Eclectic Society, the Chicago Dental Society, the Chicago Bar Association and various other interested bodies to the end that a representation committee be appointed to arrange a comprehensive, popular program through which the various schools and branches of the medical profession may cooperate with the legal and other organizations to carry on this important work.

A. M. CORWIN, Chicago,
 H. M. CAREY, Pittsburgh,
 JULIUS GRINKER, Chicago.

Seconded and carried.

WHEREAS, It is well recognized by the medical profession and all students of sociology that heredity is a potent factor in the production of certain forms of insanity, feeble-mindedness, epilepsy, and criminality; and

WHEREAS, These conditions are rapidly increasing; and

WHEREAS, Prevention of the propagation of these defectives is the chief means of controlling the situation; therefore be it

Resolved, That it is the sense of this conference of the Chicago Medical Society in session with representative alienists of the country that appropriate laws should be enacted by the legislatures of the several states and territories to correct and control the evils in question by compulsory segregation or sterilization.

H. M. CAREY, Pittsburgh,

A. M. CORWIN, Chicago,

JULIUS GRINKER, Chicago.

Morning Session, April 19, 1912

"Heredity with Charts of from Two to Four Hundred Cases that His Asylum Has Investigated," Dr. Henry A. Cotton, Trenton, N. J. "Dementia," Dr. E. Moore Fisher, Greystone Park, N. J. "Presenile Psychoses," Dr. W. J. Treadway, Jacksonville, Ill. "Mental Work-Susceptibility to Fatigue-Effect of Training-Bromid Treatment, Etc., in Epilepsy," Dr. Edwin Katzen-Ellenbogen, Skillman, N. J.

Afternoon Session, April 19, 1912

"Research in Psychiatry," Dr. Bayard Holmes, Chicago, Ill. "Nursing of the Insane," Dr. Frank Norbury, Springfield, Ill. "The Psychopathic Ward and General Hospital," Dr. H. J. Smith, Watertown, Ill. "The Observation of the Insane in Psychopathic Institution for a Time Before Commitment," Dr. Geo. Butler, Chicago, Ill.

CHICAGO MEDICAL SOCIETY

Regular Meeting, May 1, 1912

A regular meeting of the Chicago Medical Society was held May 1, 1912, with the president, Dr. J. M. Patton, in the chair. Dr. Karl von Ruck, Asheville, N. C. (by invitation), read a paper on "A Practical Method of Prophylactic Immunization Against Tuberculosis, with Special Reference to Its Application to Children."

DISCUSSION

Dr. F. Tice: Dr. von Ruck was one of the foremost men in the country to attempt to produce a vaccine against tuberculosis. What he tells us to-night is certainly of great interest, especially in connection with the announcement made by Dr. Webb of Colorado Springs a short time ago. Dr. von Ruck has done much in this line of work, and he was the originator of the use of the aqueous extract of the tubercle bacillus in the treatment of tuberculosis. He is apparently not of the opinion, however, that tuberculin is a specific in tuberculosis. I believe the opinion held by most workers is that it cannot be depended on as a specific, and they are agreed that we should have a vaccine which will not only cure but prevent tuberculosis.

Dr. von Behring's work of vaccinating calves against tuberculosis seems to make it perfectly feasible and rational that something may be produced which will prove to be of use to prevent tuberculosis in man. Dr. von Ruck has referred to some of the cases he treated, and some of them were undoubtedly tubercular. It would be of interest to know what the future progress of these cases will be. We will certainly all watch for a more detailed report of his work, one which will refer more particularly to the method of preparation and use of the vaccine. We must look to Dr. von Ruck with great admiration and give him unlimited praise and credit for his work.

During the days of the revolution against the use of tuberculin he was a strong and staunch supporter of it, and he has lived to see the time when the discredit thrown on tuberculin has in great part passed away, and we again find him an active worker in the foremost ranks, working for vaccines, and I trust that his dreams, at least in greater part, may be realized.

Dr. H. J. Achard: It is significant that Dr. von Ruck reported his clinical investigations before he mentioned his animal experiments. I should have liked to hear from some laboratory workers with regard to the experimental view of the problem before us. Although the animal experiments have paved the way for the clinical observations, we must not forget that these results can never be translated directly into human medicine. They can only give us suggestions and serve as a guide. It is therefore the more important to find that Dr. von Ruck actually succeeded in producing a condition in children, non-tuberculous, partly suspected of being tuberculous, partly probably with latent or quiescent tuberculosis, which would undoubtedly protect them against infection, as is shown by the active immunity which they acquired after treatment. Their sera contained measurable amounts of different antibodies. These children showed at the first examination some slight signs and symptoms of tuberculosis, and they showed a marked improvement on reexamination following treatment. They showed a distinct gain in weight and in their general condition, aside from the fact that they had acquired an active immunity against tuberculosis. This is the point that must appeal to us as clinicians. It is evidently a practicable thing and can be applied in those cases in which it is most desirable to give something more than simple general treatment. The result of Dr. von Ruck's long work and research will be of the greatest importance to us as physicians, and still more to our patients, especially the children, whom we may be called on to protect from this disease.

Dr. Karl Koessler: If Dr. von Ruck can prove what he has told us, his work is the greatest advance that has been made in the study of tuberculosis since the discovery of the tubercle bacillus. If you read his first, second and third article on this work, you will find that in each one he proclaims that now he has found a cure for tuberculosis; but even if he has found nothing at all except the theoretical part of his discovery, he has found a great deal.

What is the present idea of antibodies in tuberculosis? There are agglutinins, which can be demonstrated; precipitins; opsonins and complementary antibodies. You can take the latter to demonstrate the lytic faculty of serum. You can take the complementary bodies to demonstrate tuberculosis at present only if the person has received successively a quantity of one hundred milligrams of tuberculin, and Dr. von Ruck told us that if he injects only two-tenths of a milligram of his substance, he can demonstrate complementary antibodies in the blood after one injection. Not only this, but if he takes the serum eight days after injection and brings it together with virulent tubercle bacilli, it dissolves the bacilli. This means that he has proven that we have been working for thirty years, that there are actual lysins in the blood serum of tuberculous patients, which are the mode of prevention of tuberculosis. These lysins can be demonstrated in the serum after the injection of .2 of a milligram of this vaccine. If nothing else is right, if the curative value of these lysins or sera is *nil*, if he has found that such lysins are present in the serum of a child which has received .2 of a milligram, or even 100 milligrams of his vaccine, he has done a great deal.

Our present conception of antibodies is theoretical. Wolf-Eisen believes in lytic immunity in tuberculosis. Dr. von Ruck says that he has found and seen this dissolution of the tubercle bacilli. That is a great step in advance. As far as his vaccine is concerned, we must wait until we have seen how he makes it, and his methods of using it. The methods of immunization in tuberculosis are founded on two principles—either we try to grow the tubercle bacillus in bouillon and use the toxins which have been produced, making the organism immune by injecting increasing doses of the poison, or we use proteins, which are made from the extract of the tubercle bacillus. In the last four years some

investigators have tried to extract the fat elements which play the greatest role, such as a mixture of proteins and the fatty acids of the tubercle bacillus wax. Of course we know nothing of its value as a curative or prophylactic measure. I hope that Dr. von Ruck's observations will be confirmed, because if he can do what he says he can, he has done more than any man since the time of Robert Koch.

A Member: Dr. Koessler has discussed more particularly the serum reactions. To me the animal experiments are the more striking. I would like to ask Dr. von Ruck whether comparative studies have been made of the different substances produced by the tubercle bacillus, such as the neutral acids, fatty acids, proteids, and nucleo-proteids; whether there is any difference in the immunity reactions produced by these, and whether the immunity reaction produced by all of them is different from that produced by any one of them?

Dr. von Ruck (closing): The several proteins which are present in the preparation were studied separately as to their power of producing antibodies in the human subject, and in animals. The one which, when used alone, gave the least satisfactory results, is represented in the preparation by the smallest quantity of 0.25 milligrams. The average results from the separate trial of the other proteins appeared in favor of No. 2 and No. 4, especially the latter.

Experiments on animals with the fatty extractives appeared to indicate that the fatty acids are more effective than the neutral fats, although I failed to fully protect animals against infection with either of them alone or combined, regardless of the dose, while in separate trials with proteins Nos. 2, 3 or 4, when the blood specimen was taken at the proper time I obtained complement fixation with all antigens, including fatty acids and neutral fats, and the serum was lytic *in vitro*.

When, however, the combined proteins were used inclusive of the fats, the averages of serum dilution in which complement fixation was complete appeared somewhat higher, and it is for this reason that the fatty extractives have been retained for the present.

With reference to the results shown, the most important one is, in my opinion, the uniformity of the appearance and undiminished continuance of specific amboceptor in every one of the vaccinated children, and that every serum specimen examined, three to eight months after vaccination, when the blood was taken at or near the acme of the positive phase, showed an unmistakable lytic effect on virulent tubercle bacilli *in vitro*. When I had made sure of this fact by numerous examinations and had likewise proven that the bacillary residue was no longer virulent when injected intraperitoneally in guinea pigs, the study of Pfeiffer's phenomenon and other experimental infections of immunized animals seemed of secondary importance, but the complete phagocytosis and disintegration of tubercle bacilli observed after one to three hours in the living immunized animals and the complete protection after such a massive infection, and in another series after intratracheal infections serve to corroborate my observations.

I regret that the microscopes set up to demonstrate the lytic action of the immune serum of vaccinated children are not provided with immersion lenses, and that on this account it is impossible to show you my mounted slides; under the circumstances you must for the present take my word for it until the publication of the full report where reproductions of them will appear.

While the number of animal experiments would have been larger had I been able to obtain more animals, I believe I have compensated for a greater number by exact and critical observations. More numerous control experiments would, however, have been superfluous, inasmuch as they could only show the virulence of the culture of tubercle bacilli used, which is amply in evidence in the autopsies of the ten animals I have used.

I believe that I have approached the subject of proof of my method from every reasonable standpoint, and would like to point out that any single experiment or observation is confirmed by all others, all showing the method effective and

to comply with the practical requirements which I formulated in the early part of my paper.

Although the absolute proof by infecting and proving by autopsy the protection in the human subject cannot be supplied a study of my complete report will show, that such proof even if it were possible, would be superfluous.

Regular Meeting, May 8, 1912

A regular meeting of the Chicago Medical Society was held, May 8, 1912, with the president, Dr. J. M. Patton, in the chair. In a symposium on "Nystagmus" Dr. L. Harrison Mettler read a paper on "Nystagmus." Dr. William L. Ballenger read a paper on "Nystagmus and Associated Symptoms of Labyrinthine and Cerebellar Disease," illustrated with stereopticon. Dr. Frank S. Churchill read a paper on "The Wassermann Reaction in Infants and Children. A Clinical Study."

DISCUSSION ON THE SYMPOSIUM

Dr. Julius Grinker: From Dr. Mettler's splendid résumé of the physiology of nystagmus one receives the impression as though we were dealing with a subject which has been proven in every detail. The fact is that only a small number of tracts in connection with the vestibular mechanism have been definitely worked out—the rest is conjecture.

Dr. Ballenger's presentation of his side of the subject was so lucid that the objection frequently made against learning the new tests on the ground of being too abstruse is thereby answered. There can be no doubt that the tests for the production of temporary nystagmus by rotation, the injection of hot or cold water, and the application of galvanism, are of great importance in etiologic diagnosis. To a lesser degree may their importance prove itself in neurologic diagnosis. While not absolutely necessary in the diagnosis of cerebellar tumors, yet there are a number of other conditions in which their application may shed additional light upon any otherwise doubtful status. The caloric tests, for instance, may become useful in ascertaining the degree of coma in which a patient without a history of the case may be found. In very deep coma, neither hot nor cold water will produce nystagmus. As consciousness returns, cold water causes a fixed deviation of the bulbi in either one or the other direction; somewhat later the hot water test causes a similar result. When the loss of consciousness has become slight, the fixed deviation disappears and rapid nystagmoid movements appear.

Another condition in which the artificial production of nystagmus by means of the caloric tests may give valuable aid, is the ascertainment of paralysis of the ocular muscles, especially in comatose cases. Assuming that the right internal rectus is paralyzed: injection of the right ear with cold water will cause nystagmoid movements toward the left side, but owing to the paralysis of the right internal rectus, the right eye will not turn beyond the median line, while the left will swing over to the extreme limit. The value of this test in such instances consists in the circumstance that the patient being comatose we can obtain an answer without his cooperation.

Likewise in *multiple sclerosis*, a disease in which active nystagmoid movements occur, both spontaneously as well as by the various tests, the latter may clear up a doubtful diagnosis. It is in those cases with ill-defined symptoms, in which the optic nerve is early involved and with other symptoms late in developing, or in which we first see the patient during a remission, that the *hypernystagmoid* phenomena may become of diagnostic importance. In other forms of optic nerve involvement, that is, those not followed by multiple sclerosis, there is no such prompt nystagmus. Here it must be remarked that when there is a spontaneous nystagmus to the right, that the injection of water into the right ear causes a suppression of the spontaneous nystagmus at least temporarily.

- The same holds good for the left side.

To differentiate cerebellar or cerebello-pontile angle disease from acute destruction of the labyrinthine structures it is necessary to remember the

following: In acute labyrinthitis it is still possible to have temporarily either caloric or spontaneous nystagmus toward the affected side, which will shortly disappear. Should the spontaneous nystagmus then become more accentuated and persist, the trouble is probably intracranial. The characteristic symptom of extension of the disease to the cerebellum with reference to the nystagmus is that the caloric nystagmus may be lost, while there may still be present a vigorous spontaneous rotatory nystagmus. The labyrinth being paralyzed, it is impossible to cause nystagmus by peripheral stimulation—the spontaneous nystagmus must have been caused by irritation within the cranium.

Dr. Ballenger (closing): Why should the neurologist familiarize himself with the otologic aspects of this question? Because in many instances he must differentiate between an ear and a cerebellar lesion. There are many cases in which he must be thoroughly familiar with both aspects of the subject before he can make a differentiation.

DISCUSSION OF THE PAPER OF DR. CHURCHILL

Dr. W. E. Post: The most important question raised in the paper is with reference to a positive reaction obtained in non-syphilitic children. Dr. Churchill named some of the conditions in which such a test was obtained, when there was no sign or history of syphilis. There are other conditions than those which he has named which react similarly. Whether the positive test in these cases is due to an associated syphilitic condition has not been settled, and that is why extremely careful work is necessary in getting histories, in making examinations, and in doing autopsies before we draw any positive conclusions.

One of the things omitted in Dr. Churchill's list was jaundice. Cases of jaundice are likely to give a positive modified Wassermann reaction. That has been reported by various workers. My interest was aroused in this connection, and I took a series of negative sera and added to them such freshly obtained bile. In a dilution as high as one to eighty the tests were positive. Then I wondered whether this was due to the mucus in the bile. I found a case with a mucous fistula from the gall-bladder the cystic duct of which was occluded, a clear transparent mucus could be obtained. Adding that to a negative serum, a positive test was obtained. To my knowledge this has not been noted by other workers.

Cases of carcinoma of the tongue and rectum and cases of endothelioma of the brain give a positive reaction. Two weeks ago a case of septic endocarditis came to my notice; I had a test made, and with an unheated serum a positive result was obtained. I did not believe that syphilis was present and the result with a heated serum was negative. Two or three years ago we did not always heat the serum and this may account for positive results in Dr. Churchill's cases of endocarditis.

This shows the importance of complete controls, and it shows also that in cases where there is no clinical syphilis repeated serum tests should be made before the case is called one of syphilis, and then the test must be used in conjunction with clinical knowledge. Until we can be absolutely sure of our findings and of our diagnosis, and as to the actual character of the reaction obtained, we should not draw any conclusions. I have heard serologists say that when they obtained a positive test syphilis was present, but I have seen them make mistakes on that. In the absence of other signs we cannot be sure that we have syphilis when we get one positive reaction. I hope for the future of the problem that we may learn something more about the nature of the reaction.

Dr. J. F. Waugh: When beginning on this work, the question arose as to what method to use in making the test. In the majority of cases we employed the Noguchi modification, although we used both the Wassermann and the Noguchi. In the case of very young infants it is extremely difficult to use the Wassermann test, whereas the Noguchi test can easily be carried out. I have used both methods and compared them, and I feel that the Noguchi is a little more delicate than the Wassermann.

As to the positive reaction in cases other than syphilis: It has always been a question in my mind whether syphilis can be ruled out in these cases. The same is true of carcinoma of the tongue. Carcinoma of the tongue frequently develops on a gumma, and naturally the patient will give a positive reaction. I have seen such cases, and so have you. I have in mind now a man with a carcinoma of the tongue who repeatedly gave a positive test. He received three or four injections of salvarsan and improved very markedly for a number of months. But the carcinoma was still there, and undoubtedly will prove the cause of his death.

Another condition to be considered is when we get a negative Wassermann with undoubted syphilitic lesions. It seems to me that in certain cases the lesion is walled off by protective connective tissue, and there is not enough syphilitic poison absorbed into the circulation to give a positive reaction. We have had a number of cases of palmar and plantar syphilitic lesions. It is those cases that are particularly resistant to treatment. I have a case in mind, a young man who was treated for over two years. He had absolutely no sign of syphilis, and gave a negative Wassermann. Later he developed lesions all over his body and gave a positive Wassermann. Then, again, there are unquestionably cases that give a persistent positive test with absolutely no sign of the disease, and the patient apparently in perfect health.

One other point: When can we assure the patient that a cure has been effected? How long should the test be repeated after the treatment has been suspended. In a recent article Nicolls, of the United States Army, said that a negative test for a year after treatment is suspended is sufficient assurance that a cure has been effected. I have seen patients give a negative test for longer periods than that, and come back with positive signs and a positive reaction. So that there is no hard and fast rule to be laid down. Each case must be treated by itself, and the tests must be repeated at intervals for one year or even four or five years, to make sure that there is not the slightest focus that is lying dormant, and which would later be the source of considerable trouble.

Dr. H. K. Nicoll: In order to overcome the inhibition of hemolysis in a test due to previous hemolysis in the specimen of blood it is usually necessary to add an excess of amboceptor or complement, and in doing this you necessarily must destroy to some extent, the fineness of the test. This previous hemolysis is usually due to trauma of the blood when obtaining it, or to shaking of the specimen or exposure to heat, etc. in transportation, or occasionally to water which is left in the syringe after it has been boiled. In my experience this has proven one of the greatest disturbing factors in making the test.

Dr. F. Baumann: This paper shows again as I have shown previously that the Wassermann serum reaction is specific in a quantitative way only, but not in a qualitative. Investigations in this direction are very valuable and instructive for the profession at large and should be encouraged.

CRAWFORD COUNTY

The annual meeting of the Crawford County Medical Society was held July 13, 1912, at the Carnegie Library, Robinson, Ill. The meeting was called to order by the president at 2 p. m. and the minutes of the previous meeting were read and approved. The following members of the society were present: Drs. Mitchell, T. N. Rafferty, Carlisle, Wilson, Kasdorf, H. N. Rafferty, Kirk, Henry, Firebaugh, Price, Newlin, Davis and Lowe.

The election of officers being in order, the following officers were elected by acclamation for the ensuing year: president, H. N. Rafferty; vice-president, I. L. Firebaugh; secretary-treasurer, A. Lyman Lowe; censors, C. E. Price, Frank Dunham and C. H. Voorhies; delegate, G. H. Henry; alternate, J. W. Carlisle.

A suggestion to the effect that the expenses of the delegate to the State Medical Society be defrayed by the County Society was offered and after some

discussion a motion was made and carried that the railroad fare of the delegate be refunded to him from the treasury of the County Society.

The annual reports of the secretary-treasurer were read and upon motion duly carried were received by the society.

The retiring president, Dr. Henry, made an interesting address along the lines of general progression in medicine and the necessity for concerted action by the members of the society, for a successful society.

This was followed by a very excellent paper by Dr. Kasdorf on "Urethral Stricture, with a Report of Case." The paper dealt first with the anatomy of the urethra, which was illustrated by drawings made by Dr. Kasdorf. The symptoms, classification and treatment were each entered into with great thoroughness, making a very interesting and instructive paper. It was moved and carried that the paper be received by the society for discussion, which was led by Dr. T. N. Rafferty and participated in by the various members.

Moved and carried that the society dues remain \$3.50 for the current year. The suggestion was offered that the Crawford County Medical Society hold a joint meeting with the Jasper County Society in Oblong in September, but no action was taken.

Drs. Newlin and Firebaugh reported a case of dermoid cyst in the ovary of a woman 53 or 54 years of age. The cyst contained about a quart of thick serous fluid and some hair but no fetal tissue.

Upon motion duly carried the meeting adjourned.

A. LYMAN LOWE, Secretary.

FULTON COUNTY.

The sixtieth meeting of the Fulton County Medical Society was held in the parlor of the Churchill House in Canton July 2, 1912, and was called to order at 2 p. m. by President Murphy. The secretary was not present with the minutes of the last meeting.

On motion the regular business was dispensed with and the scientific part of the program taken up. Dr. Gray read a paper on the "Discontinuance of Medicine," and Dr. Hanna of Peoria read one on "Extrauterine Pregnancy." Both papers were freely discussed.

Dr. O'Riley was appointed to secure flowers for the funeral of Dr. Logan and to present the bill to the secretary for settlement. Drs. Shallenberger, Zeigler and Coleman were appointed as a committee to draft resolutions of respect concerning Drs. Nelsor and Logan, recently deceased.

Those present were Drs. Hanna of Peoria, W. D. Nelson, Seymour, Nelson, Murphy, Shallenberger, H. H. Rogers, Maud T. Rogers, Scholes, Richards, O'Riley, Zeigler, Allison, Beatty, Gray and Adams.

D. S. RAY, Secretary.

LAKE COUNTY

A meeting of the Lake County Medical Society was held June 24, 1912, at 8 p. m., at the offices of Drs. Bouton and Watterson, Waukegan.

In the absence of the president and vice-president, Dr. F. L. Gourley of Waukegan was chosen chairman for the evening. The secretary's report was read and approved. A communication was then read concerning the midwife case at North Chicago. Dr. J. A. Egan, secretary of the State Board of Health, had corresponded with Coroner John L. Taylor concerning this matter, after having carefully gone over the report of the coroner's inquest. Dr. Egan stated in his letter that it seemed a splendid opportunity for the county medical society to take the matter up. Dr. Taylor stated that there seemed, for some reason, an indifference or objection on the part of the state's attorney to take these matters up. Dr. Foley stated that the state's attorney was willing to take the matter up if the society could furnish the proper evidence, but without this the state's attor-

ney would not care to waste time without being assured that the proper evidence was forthcoming. It therefore seemed to be up to the society. It was moved and carried that the chair appoint a committee of three to confer with the state's attorney on this matter. The chair appointed the following: Drs. W. C. Bouton, L. B. Jolley and J. C. Foley.

This was followed by a most excellent illustrated lecture on "Pathology of the Gall-Bladder," by Dr. F. A. Besley, Chicago. By means of the lantern he threw a number of views on the screen, which assisted materially in demonstrating the points brought out by his talk. The doctor emphasized the fact that there were many more gall-bladders removed than was necessary, and that drainage of the gall-bladder was a much better operation than its removal. He also brought out a rather new idea, but backed it by his personal findings and those of other investigators, that in all probability infection of the gall-bladder most frequently came from above rather than from below; that is, from the liver itself rather than from some ascending infection from the intestines. The paper was followed by a discussion by Drs. Foley, Gourley, Bouton and others, and the discussion was closed by Dr. Besley. It was one of the most interesting lectures ever given before our county medical meeting, and was thoroughly appreciated by all present.

Following this, Dr. W. C. Bouton, alternate delegate to the state medical meeting, reported on the meeting in the absence of Delegate Fuller, whom we hope to get a further report of the meeting from at our next meeting. The doctor gave a most excellent report, reviewing the topics and bringing out the most emphatic points of papers given at the state medical meeting. Further report of the meeting, including report of the House of Delegates, will be given at our next meeting by Dr. Fuller.

Following this the annual election of officers occurred, as follows: Dr. H. B. Roberts, Highland Park, president; Dr. W. S. Bellows, Waukegan, vice-president; Dr. W. C. Bouton, Waukegan, secretary. The enthusiasm with which the new officers took up their work gives great promise for a new and progressive life of the society during the coming year.

Those present were: Drs. Withers, Stone, Bouton, Daniels, H. B. Roberts, E. V. Smith, Herschleder, Szumkowski, Churchill, Watterson, Tombaugh, Jolley, Wright, Bellows, Besley, Foley, Gourley and Ludwig.

W. H. WATTERSON, Secretary.

LA SALLE COUNTY

The LaSalle County Medical Society met at Streator, April 23, 1912, at the Methodist Church. There were present the following: Blanchard, Love, Clark, Conley, McCord, Weis, Ensign, Milligan, Wilson, Deus, Sexton, Perisho, Lester, Goble, Burke, Burrows, Fahrney, Rose, Balenseifer, Guthrie, Van Doren, Smith, Leland, Landgraf, Sehurtz, Hirseh, Butterfield, Green, Naumann, Yoder, Fullenweider, Howe, Fread, Parr, Bronson, Pureell, Sehurtz, Jr., Shaw, Pettit, Lespinasse, Besley and Roberts.

The meeting was called to order by Vice-President M. E. Blanchard. The minutes of the fall meeting of 1911 were read and approved as read.

A communication from the secretary of the State Board of Health was read but no action taken by the society.

The secretary read his report and same was referred to the auditing committee. Total receipts, \$574.20; total disbursements, \$244; balance, \$330.20.

The society reconvened at 2 p. m. with President E. H. Butterfield in the chair.

The following report was also submitted: "We, the auditing committee also concur in the suggestion of the secretary and therefore recommend that we pay the secretary the sum of \$25 per year. P. M. Burke, E. T. Goble."

The above report and recommendation were upon motion adopted.

The nominating committee reported as follows: For president, Dr. M. E. Blanchard, Marseilles; vice-president, Dr. Roy Sexton, Streator; secretary-treasurer, Dr. E. W. Weis, Ottawa; censor for three years, Dr. G. T. Love.

Upon motion the secretary was instructed to cast the ballot of the society for the above named officers. The secretary cast the ballot in accordance with the above report and they were declared elected. The board of censors recommended for membership the name of Dr. H. L. Rose, of LaSalle. He was duly elected. Dr. F. A. Guthrie moved that we hold three meetings to be known as evening meetings in addition to the two meetings as now held, and that the chair appoint three members to act as a program committee. The chair appointed as such committee Drs. F. A. Guthrie of LaSalle, E. E. Perisho of Streator and E. W. Weis of Ottawa.

The program as published was now carried out as follows:

1. President's address, E. H. Butterfield, Ottawa.
2. Pathology of the Gall-Bladder, F. A. Besley, Chicago.
3. Relation of Tonsillar Infections to General Diseases, F. A. Guthrie, LaSalle.
4. Technique of Blood Vessel Anastomosis:
 - (a) For Direct Transfusion of Blood.
 - (b) For Permanent Repair of Blood-Vessels, V. D. Lespinasse, Chicago.
5. The Working Principles of Immunity and their Application to the General Practice of Medicine, R. T. Pettit, Chicago.

Dr. Ensign moved that we offer a vote of thanks to the essayists who came to make our meeting a success.

Dr. W. O. Ensign gave a detailed report of his labors as the delegate to the state society. The same was upon motion received and ordered placed on file.

The meeting now adjourned in due form. At 6:30 p. m. the society took part in a banquet at the M. E. Church at which a very interesting program was given, the same being enjoyed by everybody.

The La Salle County Medical Society held its first experimental evening session in the city of La Salle, July 17, 1912. There were present thirty-two members. The topics presented and under discussion were very timely ones, treating of those diseases that are incidental to this time of the year. The program was as follows: "Enteritis and Colitis in the Adult," B. J. Naumann, Peru; "Cholera Infantum," R. C. Fullenweider, La Salle; "Milk and Milk Commission," W. W. Greaves, La Salle.

In connection with the last named paper the first annual report of the Emma Matthiessen Chancellor Memorial Modified Milk Station was read. This report is of great interest, showing what can be done in smaller cities to obtain a perfect milk supply. For the benefit of those who would like to see the establishment of similar commissions we give the report in full.

To the Honorable F. W. Matthiessen and the Honorable T. F. Doyle, Mayor of La Salle:

Gentlemen: I have the honor to submit to you the first annual report of the Emma Matthiessen Chancellor Memorial Modified Milk Station located at La Salle, Illinois, for the benefit of the infants of La Salle, Peru and Oglesby. The laboratory was established through the generosity of Mr. F. W. Matthiessen who furnished the funds necessary to equip same with all apparatus, utensils and material required to operate it. Since its establishment on June 9, 1911, Mr. Matthiessen has contributed \$200 each month for its maintenance. The object of the laboratory is to furnish a high grade of modified milk to the needy, artificially fed infants, as directed by the physicians. Also to supply nursing mothers, whose systems require that they consume a certain quantity of milk, to enable them to furnish sufficient nourishing milk to their offspring. The gift stipulated that certified milk be used, but being unable to obtain same in La Salle, Mr. Matthiessen kindly furnished the laboratory with a high grade of milk from a sanitary dairy which he has established at Deer Park. The milk shows the following test:

Bacteria—under 10,000 per c.c. of milk.

Cream—4 per cent.

The laboratory was originally intended for the needy infants of the community, but as all classes were unable to obtain a good grade of certified milk for their bottle-fed babies, they were, consequently, supplied with milk.

When the station was established some doubt was expressed as to its success on account of its newness to the people of the community, but it is with pleasure that the committee reports its success in the first year of its existence. It is the belief of the committee that the patients, having learned the quality of the milk, appreciate the station and if the same could be sold to everybody the demand would greatly exceed the supply.

Commencing March 1, 1912, the station supplied a limited number of sick and needy adults whose physicians ordered milk as a diet. This was continued as long as milk was available, but at the present time the infants require so much of the supply that no new cases of adults are taken. The reports which the patients bring to the station as to the nourishing qualities of the milk and the palatability of the same are very encouraging and speak well of the appreciation of the public for a good, pure milk. Many infants were brought to the station from surrounding towns and fed upon the milk until they commenced to thrive and then it was tried to change to their home milk modified precisely the same, but on account of summer complaint which was again brought on by germ and dirt laden milk they were forced to return to the station and happily to say they thrived once more. The milk, fed many infants, shows a high percentage of fat and comes from perfectly healthy cows but on account of the dirt allowed to enter in handling and the high temperature which it is exposed to, if for only a few hours, quickly multiplies the bacteria so that it is unfit for infant food. Many people think that if milk shows a high cream test that it is excellent milk, whereas it may be rich milk but nevertheless be laden with bacteria and filth.

Since June 9, 1911, to July 1, 1912, 135 cases have been furnished with milk. One hundred and six were infants under two years of age; 11 were children, 17 were adults.

Diagnosis of infants, cases: Anemia, 4; convulsions, 2; cholera infantum, 1; enteritis, 21; gastro-enteritis, 17; gastritis, 5; feeding, 37; inanition, 1; malnutrition, 13; marasmus, 3; pneumonia, 1; pertussis, 2; total, 107.

Diagnosis of children, cases: Anemia, 3; inflammation of bowels, 1; pneumonia, 1; scrofula, 1; scarlet fever, 1; typhoid fever, 1; tuberculosis, 3; total, 11.

Diagnosis of adults, cases: Anemia, 6; carcinoma, 1; colitis, 1; malnutrition, 1; nursing mothers, 4; nephritis, 1; pneumonia, 1; tuberculosis, 2; total, 17.

The cases were sent by physicians from their respective towns as follows: La Salle 125, Peru 4, Oglesby 4, Spring Valley 1, Cedar Point 1. The charges for our feedings and milk were very small and all who could, were urged to pay something, if only a few cents. To those whose circumstances would not permit, free milk was supplied. Nineteen cases received free milk; 55 cases were charged a few cents, while 61 were full pay.

The committee wishes to thank the medical profession of the vicinity for its earnest support during the past year and hopes that all can work together to make the station one of the best in the state. We also wish to thank Dr. Phillip Chancellor who gave us many able suggestions, and Mr. F. W. Matthiessen, through whose generosity the medical profession was able to establish the station.

W. W. GREAVES, Chairman.

MADISON COUNTY

The Madison County Medical Society met under the trees on the spacious grounds surrounding the home of Dr. W. H. C. Smith at Golfrey, on July 5, 1912, at 2 o'clock. In the absence of the president, Dr. G. Taphorn, of Alton, was called to the chair. Dr. M. D. Tibbets, of Highland, was elected to membership. The chair appointed Drs. Smith, Fiegenbaum and Shaff as a committee to draft suitable resolutions on the death of our fellow-member, Dr. A. J. Ihne, of Fosterburg. Dr. Cook was instructed to send flowers to Dr. J. M. Pfeifferberger, who

was in the hospital following an appendectomy. On motion of Dr. Halliburton, Alton was selected as our next place of meeting, to include a boat ride on the river. A paper prepared by Dr. Ferguson, the president's annual address, was read by the secretary, owing to the unavoidable absence of the author. It was an exhaustive paper on "The Cause of Some Nephritic Symptoms," and was received with marked attention by the members. It contained some very advanced views on some of the obscure manifestations of this disease, and is a valuable contribution to the literature on the subject. Our visitor from the Green County Medical Society, Dr. Squires, of Carrolton, was called on, and responded by a short talk that was much appreciated by his hearers. Dr. J. M. Baker, of Granite City, gave the details of a very unfortunate application of salvarsan, the patient dying immediately after an intravenous injection given in the usual manner. Dr. J. N. Shaff gave a summary of the sickness and death of Dr. Ihne, who died from peritonitis after an operation for draining a post-eccal abscess. On motion by Dr. Cook, a vote of thanks was extended to Mrs. W. H. C. Smith, our hostess, for the generous hospitality extended to our members and for the elegant refreshments. Members present: Drs. Taphorn, Wedig, Halliburton, Yerkes, Hirsch, Wahl, Oliver, Sims, Barnsback, Beard, Smith, Burroughs, Shaff, Joesting, Duggan, Cook, Fisher, Tulley, Baker, Davis and E. W. Fiegenbaum. Visitors: Dr. James Squires, Carrolton, and Dr. O. O. Gibberson, Alton. On motion adjourned to meet in Alton on the first Friday in August.

E. W. FIEGENBAUM, Secretary.

MOULTRIE COUNTY

The second quarterly meeting of the Moultrie County Medical Society was held in the probate court room in the court house, Sullivan, Ill., Tuesday, July 16. The meeting started out with a luncheon at 12 o'clock and the program began at 1 o'clock, so that the physicians from Bethany and Dalton City, who had to leave on the 2:33 train, could get part of the program before returning home.

The meeting was presided over by Dr. S. L. Stevens, of Dalton City, president of the society. The minutes of the last meeting were read and approved and a short business session held. After this Dr. W. F. Burres, of Urbana, had charge of the meeting and read a very interesting paper on "Medical Jurisprudence and Malpractice."

The physicians had invited the attorneys of the city to attend this meeting, but only four could be present: Judge Isaac Hudson and Attorneys Edward E. Wright, John T. Grider and States Attorney Joel K. Martin.

The physicians attending were: Drs. C. M. Taylor, Bethany; D. D. Greer and Hardinger, Gays; S. L. Stevens, Dalton; S. W. Johnson, J. F. Lawson, R. B. Miller, O. W. Williamson, G. B. Kessler, W. E. Stedman and W. D. Davidson, Sullivan, and Dr. Kemery, Allenville.

OGLE COUNTY

The regular meeting of the Ogle County Medical Society was held in Paul's Opera House, Forreston, July 17, 1912. President Houston called the meeting to order. Roll-call found the following members present: Drs. Beard, Griffing and Houston, of Polo; Beveridge and Sheets, of Oregon; Hedberg and Kretsinger, of Leaf River; Brown and Overfield, of Forreston; Brigham, of Brookville, and Johnston, of Byron.

Dr. Akins, of Forreston, who worked hard to make this meeting a success, was taken seriously ill and was unable to be present at the meeting. Dr. Stealy expressed the sentiment of the society and sincere desire that the doctor be restored to his good health.

Visiting guests present were: Drs. Arnold, Kareher and Stealy, of Freeport; Hedrick, Packard and Wales, of Lanark; LeSage and Murphy, of Dixon; Allaben and family of Rockford, and Dr. May, of Shannon.

The regular program was taken up. Dr. J. E. Allaben, of Rockford, read a valuable and instructive paper on "Diagnosis and Treatment of Diffuse and Suppurative Peritonitis," and presented some drawings to illustrate. A general discussion followed by Drs. Arnold, Wales, Griffin, Beard, Hedberg, Johnston, Stealy, and Allaben to close.

Dr. S. E. Murphy of Dixon, gave an interesting talk on "The Prophylactic and Urgent Treatment of Eelampsia." The doctor always has something good to tell the society on any subject. Owing to the lateness of the hour this subject was not discussed. Business meeting followed. Election of new officers: president, S. D. Houston, Polo; vice-president, L. A. Beard, Polo; secretary-treasurer, J. T. Krestinger, Leaf River; censor, J. M. Beveridge, Oregon; delegate to state medical meeting at Springfield, W. W. Overfield, of Forreton; alternate, R. O. Brown, of Forreton. Dr. J. A. Johnston, of Byron, was elected to membership in the society.

On motion made by Dr. Beard, a vote of thanks was tendered to Drs. Allaben and Murphy for their valuable lectures. The meeting was one of the most enjoyable, profitable and largest in attendance the society has ever had. No further business to come before the society, the meeting adjourned to meet in Oregon the third Wednesday in October, 1912.

J. T. KRESTINGER, Secretary.

RANDOLPH COUNTY

The Randolph Medical Society met in quarterly session July 9, at the Randolph Club rooms, Sparta, Illinois, with President H. L. Gault in the chair. The following physicians participated in the proceedings of the meeting: Drs. H. L. Gault, H. T. McKee, W. L. Wyhe, E. L. Hill, A. P. Wolever, F. J. Meyer, R. O. Urban, J. W. Robertson, H. L. LeSaulnier, W. A. James and C. H. Anderson.

The society devoted the entire time of this session to the consideration of typhoid fever and the results of the latest research work in this field of medicine. After the presentation of an excellent paper on the "Symptoms and Diagnosis of Typhoid," by Dr. F. J. Meyer, the society adjourned until the afternoon session, which met at the Country Club.

Dr. W. L. Wylie presented to the society in an excellent paper, the latest on the subject of "Typhoid Vaccines." Dr. R. O. Urban demonstrated that the Russo test is the latest and the most reliable known for typhoid fever, and that the technique of this test can be carried out at the bedside at the time of the physician's first visit. Dr. E. L. Hill presented an excellent paper on "Ehrlich's Diazo Reaction" that added new interest to the use of this reliable test.

Dr. J. W. Robertson discussed in an able manner the "Treatment of Typhoid." Dr. A. E. Fritze's paper presented the method of administering, and the favorable results to be expected from the "Brand Method of Treating Typhoid." The society after extending a vote of thanks to Drs. Gault, McKee and Wylie for their hospitality, adjourned to meet Nov. 11, 1912, at Evansville, Illinois.

TAZEWELL COUNTY.

The Tazewell County Medical Society held its quarterly meeting at Washington, Tuesday, July 9, at the Commercial Club rooms. General business was transacted. Coroner William Niergarth of Pekin read a paper on "Tuberculosis of the Skin." Dr. Gale of Pekin, read a paper on "State Medical Meeting." Dr. W. H. Conibear of Morton, who is leaving that city for Florida, after having practiced there for forty-three years, gave a talk on his early practice. Luncheon was served by the home physicians after the meeting. Owing to the threatening weather only six physicians from other towns in the county were present. Several had intended motoring over to the meeting, but the weather outlook was too uncertain. Those physicians present from out of town were Drs. William Niergarth, of Pekin; W. H. Conibear of Morton; C. H. McMillan of Morton; F. C. Gale of Pekin; J. M. Cody of Tremont, and E. T. Kelehner of Delavan.

NEWS OF THE STATE

NEWS

—Diphtheria is said to be unusually prevalent in Illinois during July.

—Pulmotors are being placed in most of the largest cities of the state and used in case of emergency.

—Dr. John W. Crigler, of Saybrook, is erecting five store buildings in that city to take the place of those recently destroyed by fire.

—The Galesburg Hospital reports that 107 patients were cared for during June and over \$2,000 was received.

—Ground was broken last month for a sanatorium to be erected on the northwest side, Chicago, by the Jewish Consumptive Relief Society.

—Mayor Garseh, of Madison, is waging war on flies and mosquitoes; he recently distributed 500 wire swatters to be used for this purpose.

—The voters of Sterling will be called upon to decide whether \$25,000 shall be assessed for the erection of a new hospital in that city.

—A hospital will be erected at Peru four stories high, with frontage of 118 feet, on West Street. The cost of the building will be \$75,000.

—The Hillsboro Hospital Association has in contemplation the purchase of four choice lots at Hill Crest, the new addition to Hillsboro, for a hospital site.

—Drs. H. C. Mitchell, of Carbondale, and A. B. Middleton, of Pontiac, have accepted appointments to chairs in the National University of St. Louis.

—Dr. P. Fischer received a voucher for 10 cents after spending two days to complete papers for the State Auditor in reporting a death of one of his patients.

—The recent epidemic of typhoid fever at St. Charles has been traced to the dirty milk bottles used by the dairies. Sixty cases of typhoid resulted from this carelessness.

—As a result of a recommendation submitted to the city council of Sterling by the hospital board, the agitation in favor of the erection of a hospital has commenced.

—An x-ray machine has been donated to St. Francis' Hospital, Evanston, by a lady of St. Mary's Parish who desires to remain anonymous. The apparatus cost \$2,000.

—The Lake County Medical Society, at a meeting in Waukegan, elected Dr. H. B. Roberts, Highland Park, president; Dr. W. C. Boughton, Waukegan, secretary-treasurer.

—The citizens of Peoria, by referendum vote, authorized the construction of a tuberculosis hospital for that city, but the city council refused to enforce the verdict.

—The Peoria school board will probably pass an appropriation authorizing the employment of a complete corps of physicians, whose duty it will be to make weekly inspections in the school room.

—The staff of the Burnham Hospital of Champaign recently elected the following officers for the ensuing year: president, Dr. W. E. Schowen-gerdt; vice-president, Dr. J. S. Mason; secretary, Dr. W. M. Honn.

—Health Commissioner W. A. Uehren, of Aurora, is demanding that every resident of that community take a bath at least once every week, and that no more than two will be allowed to sleep in one bed.

—Dr. Wm. J. McKenna, of the Wabash Hospital at Danville, has left that institution and will practice in the west. Dr. A. Goetsch, of Davenport, Ia., will soon enter the Wabash Hospital.

—The physicians of Decatur and Macon County attended a dinner at Decatur, Tuesday, July 9, for the purpose of boosting the new hospital being erected in that city. The sum of \$100,000 has been raised for its construction.

—Dr. S. M. Green, of Dixon, was arrested July 12, and held by the Sheriff of Carrollton as being directly responsible for the death of Miss Mary Coleman, which followed an illegal operation. The trial will be held at Dixon.

—The city of Beardstown is making well-directed movements toward a hospital to cost \$30,000. Great encouragement in this work has been received, and it seems altogether probable that a building will very soon be erected.

—The Sangamon County Medical Society will endeavor to secure the location of the State Hospital for the Treatment of Crippled Children near Springfield; \$60,000 for the founding of such an institution was appropriated by the last legislature.

—Prof. Dr. Thorkild Roving, Copenhagen, president of the Danish Surgical Society, paid a visit to Chicago on his way to Rochester, Minn., June 26, and was entertained by the local profession and the Danish-American Association.

—On June 29 the Cook County Institutions, Dunning, were formally transferred from Cook County to the State of Illinois. The superintendent, Dr. Stephen R. Pietrowiez, has agreed to remain until his successor has been appointed.

—The National Sanatorium and Springs Company have purchased the Stoessinger property near Freeport. Temporary sheds will be erected over the springs, and bottling works installed; later this will probably be used for a large sanatorium.

—The Iowa and Illinois Central District Medical Association met in Davenport, July 11. The new officers are: president, W. W. Adams, Atkinson, Ill.; vice-president, P. A. Bendixen, Davenport; secretary, L. W. Littig, Davenport; treasurer, F. H. First, Rock Island, Ill.

—During the fiscal year ending June, 1912, 507 patients received treatment at the Wabash Hospital at Decatur, being a few less than the preceding year; 10,806 treatments and prescriptions were given outside the hospital; 240 were treated surgically at the hospital and 267 medically.

—Ada Smith, a Champaign derelict suffering from a loathsome disease, was arrested at Danville and sent to jail for sixty days in order that she might receive treatment. It is claimed that a woman walking the streets in such a condition was a menace to public health.

—A recent order for vaccination of all section men on the Illinois Traction System was issued. The men declined to become vaccinated and the compromise was made that those refusing vaccination should not be given benefit of hospital treatment, if they contracted the disease.

—Mrs. J. M. Huber, of Pana, has arranged to contribute a considerable sum toward the construction and maintenance of the hospital in that city. Mrs. Huber, in doing this, seems to be carrying out the wishes of her late husband, for many years a distinguished practitioner of Pana.

—In systematizing street names, the name of the street on which Drs. Pettey and Wallace's sanitarium is located has been changed from South Fourth to South Fifth Street. Please bear in mind that this change of address does not involve a change of location of the institution. Their new address is 958 South Fifth Street, Memphis, Tenn.

—A member of the National League for Medical Freedom who offered some criticism in the daily press on the address given by Dr. C. B. Johnson, under the title, "Disease Prevention and Some of its Marplots," was answered by Dr. Johnson in a communication to the *Champaign Gazette* of July 26. Dr. Johnson takes occasion to utter some plain and convincing language on this league.

—A large number of doctors participated in the progressive conventions which were held in every county of the state, Saturday, July 27, 1912. Among these we note Dr. Foreman, of Whitehall; Dr. Lacey, Pittsfield; Dr. Walter Bain, Springfield; Dr. Armstrong, Taylorville, and Dr. Woodruff, of Chicago. In fact, in every county of the state one or more physicians were active in this movement.

—The Montgomery County Medical Society has fallen in line with other counties and issues a bulletin every month. The July meeting was held Tuesday, the 23d, at Raymond, when a paper by Dr. Burwell on "The Things We Eat" was read. At the June meeting Z. V. Kimball prepared a paper on the "Practical Management of Tuberculosis," which was full of valuable advice for patient and physician.

—Miss Lucene Matthews, 3832 Aldine Place, was severely bitten about the arms recently by a dog belonging to Dr. Odeon Bourque, 336 East Thirty-Eighth Street. Miss Matthews was walking on Grand Boulevard when she reached Thirty-Ninth Street a dog, which she was leading, became involved in a fight with Dr. Bourque's dog. When Miss Matthews endeavored to separate the dogs the Bourque dog leaped on her and bit her several times on the arms before it was beaten off.

—Charles Deering has acquired a tract of land on South State Street from Mrs. Bertha Honore Palmer which he intends to give to Wesley Hospital. The land has a frontage of 175 feet on the west side of State Street and 100 feet south of Twenty-fourth Street. The hospital now owns 175 feet, and Mr. Deering 150 feet adjoining his present purchase.

The hospital is said to have an option on the remaining 100 feet of frontage in the block, thus rendering it possible to acquire the entire 600 feet of frontage for hospital purposes.

—The thirteenth annual convention of the Illinois Osteopathic Association, held at Peoria, adopted resolutions savagely attacking the Owen bill, now before congress, and the practice of vaccination. The Owen bill is advocated by the American Medical Association and provides for the creation of a national health bureau. Joining with the osteopaths in denouncing it are the homeopaths, the eclectics and christian scientists. Vaccination is characterized as a relic of barbarism. How to secure legislation was discussed at length, as was the proposed endowment of an osteopath institution in Chicago.

—Ezra Cadi, of Seymour, Champaign County, died July 25, of small-pox. He was 50 years of age. This death shows, while as a usual thing small-pox, which has prevailed in Illinois for the past fifteen years, has been quite mild, yet no one can tell when the fatal form may make its appearance. In connection we cannot refrain from noting that the *Freeport Illinois Journal*, reverts to the "stone age" by publishing a sure cure for small-pox of the following composition: "The worst case of small-pox can be cured in four days simply by the use of cream of tartar, one ounce dissolved in a pint of water; drank at intervals, is a never failing remedy. It has cured many, and seldom leaving a mark and avoids tedious lingering."

—People who attended the funeral of Dr. A. J. Ihne, of Fosterburg, Sunday, tell of an uncanny appearance of his body as it lay in the casket, because of the fact that the right hand was outstretched as if to shake hands. Dr. Ihne was known for his friendliness and shook hands with every one he met. When he was ill at the hospital, up to the time he became unconscious he kept his hand outstretched as if to shake hands, and did shake hands with every person who went to see him. After death the hand quickly set in that position where it had been so continuously in life, and all efforts of those who prepared the body did not avail to put the hand down in the usual position of repose. Though many attempts were made to do so, the hand could not be restrained, and finally the effort was abandoned. The hand remained outstretched as it had been so much of the time in life, and those who looked at the reposeful form of the doctor in the casket were under the impression that the hand was outstretched as if in friendly greeting, and the next thing would be a cheery word from the deceased.

PERSONAL

Dr. A. M. Hill, Genoa, sailed for Europe, June 1.

Dr. E. P. Cowden of Curran will locate in Springfield.

Dr. Ernest Weisbrodt, of Chicago, has sailed for Europe.

Dr. John Gill has located at Chamness, Williamson County.

Dr. J. A. Pratt, of Aurora, was granted a divorce July 12.

Dr Ernest will probably locate at Ashkum, Kankakee County.

Dr. John R. Sutter, of Edwardsville, has been reappointed county physician.

H. H. Rogers, M.D., Canton, has been reelected physician of Fulton County.

Dr. S. N. Sims, of Danville, is confined in the Kankakee Insane Hospital.

Dr. and Mrs. Louis Ostrom, Rock Island, are spending their vacation in Bermuda.

Dr. F. P. Taylor, of Elkhart, has gone to Wisconsin for the benefit of his health.

Dr. Armstrong, of Stonington, has arranged to build a residence in that city.

Dr. E. K. Lockwood, of Virden, with his wife and child left on July 20 to spend a year in Europe, in medical research.

Dr. R. M. Shreve, formerly of Minier, Ill., was recently married at Cheriton, Iowa. The doctor now resides at Panora, Iowa.

Dr. Theodore Proxmire, of Lake Forest, will wed Miss Adele Flanigan, of St. Louis, at the home of the bride's parents, August 10.

Dr. S. M. Greens, of Dixon, was placed under bonds of \$12,500 for performing a criminal operation.

Dr. and Mrs. E. E. Nystrom, of Peoria, are touring in their automobile in Wisconsin.

Dr. C. B. Sutherland, of Mt. Auburn, will soon leave that city and locate in Springfield.

Dr. A. L. P. Williams, of Vandalia, has spent some time near Eden, Wyo., looking after farm land which he owns in that vicinity.

Dr. J. G. McKinney, of Barry, recently suffered a broken arm while cranking his automobile.

Dr. Theodore B. Sachs has been reappointed a trustee of the Municipal Sanatorium.

Dr. and Mrs. D. A. K. Steele sailed from England, June 14, on their return from a trip around the world.

Dr. H. F. Litchfield, Kankakee, has assumed his duties as physician at the Soldiers' Home, Quincy.

Dr. Jennie Lyons, Champaign, was elected secretary of the County Secretaries' Association at its recent meeting in Springfield.

Dr. H. B. Henkel, who recently completed his internship in the St. Elisabeth Hospital in Chicago, has located in Springfield.

Dr. John Deal, Jr., having completed his internship in the Chicago Eye and Ear Infirmary, has located in Springfield.

Dr. and Mrs. V. T. Lindsay, of Springfield, have departed for Colorado to spend the summer in camping.

Dr. E. H. Fitzpatrick, of Pontiac, has opened an office at 108 North State Street, Chicago. He will spend Saturdays and Sundays in Pontiac.

Dr. J. R. Tobin, of Elgin, gave a dinner at the Elk's Club recently in honor of his Rush College classmate, Dr. Lampkin, of Rock Island.

Dr. A. S. Johnson, of Prophetstown, has been appointed District Surgeon for the Chicago, Burlington and Quincy Railroad.

Dr. D. F. Duggan, of Alton, was reappointed County Physician of Alton Township.

Dr. W. W. Mereer, of Lincoln, was operated at Brokaw Hospital, Bloomington, for perforation of the bowels July 9th.

Dr. J. M. Pfeifferberger, of Alton, was operated on for appendicitis on the morning of July 3. At last accounts he was doing nicely.

Dr. Stanly Castle, of Springfield, is doing extensive sanitary inspection in the south for the Franklin Life Insurance Co.

Dr. J. M. Threadgill, of New Douglas, has sold his office and practice to Dr. George Sharp, and will remove to St. Louis, Mo.

The engagement of Dr. C. Bennett, of Georgetown, and Miss Nellie Odbert, of Indianola, has been announced. The wedding will take place in August.

Dr. B. B. Griffith, who has been at Colorado Springs, Colo., for his health during the past two years, has returned to Springfield to resume his practice.

Dr. J. D. Lyness, of Savanna, has been appointed chairman of the committee to arrange for the reunion of Carroll County soldiers and sailors in August.

Dr. H. W. Moorehouse, of Danville, chief surgeon of the Wabash Railroad, was recently operated on for cancer of the esophagus and is in a critical condition.

Seba Ennis, of Springfield, has given up the practice of osteopathy, and with his family has removed to Virden, Ill., where he will open up a gents' furnishing store.

Dr. J. C. Akins, coroner of Forreston, was taken seriously ill and brought to St. Francis Hospital at Freeport for treatment. His many friends wish him a speedy recovery.

Dr. Carl Lindskog, who with his wife and three children came to Geneva from Sweden last fall, is soon to be deported by the government immigration authorities, because he is afflicted with tuberculosis.

Dr. and Mrs. M. L. Harris and family, Dr. and Mrs. John B. Murphy and family, Dr. and Mrs. E. Wyls Andrews and family, Dr. and Mrs. Arthur D. Bevan and Dr. Lewis L. McArthur sailed for Europe, June 11.

Dr. J. H. Campbell, who has been practicing at Jacksonville for sixteen years, has purchased the practice of Dr. H. W. Hand, of Whitehall, and will locate there immediately. Dr. Hand will move to California.

Dr. C. U. Collins of Peoria, was recently elected president of the Peoria Association of Commerce. He is said to be keeping up the splendid work of his predecessor in infusing enthusiasm in the members for the upbuilding of this central industrial city.

Dr. Jacob Frank, President of the Chicago Medical Society, and lieutenant in the medical reserve corps of the United State Army, spent the week at Camp Lincoln, near Springfield, with the second regiment of the Illinois National Guard.

Dr. Joseph W. Edwards, of Mendota, on June 29 celebrated his 80th birthday anniversary when he was congratulated by numerous friends. Dr. Edwards graduated at Rush, 1854, and has been in continuous practice since that time. He served as surgeon of the 40th Illinois Infantry, 1862-1864.

REMOVALS

Dr. L. W. Weir has removed from Marshall to Cates, Ind.

Dr. Kate Armstrong has removed from Kewanee to Cuba, Ill.

Dr. J. H. McIntosh has removed from Danville to Collison, Ill.

Dr. L. P. Wineburg has removed from Leland to Ligonier, Ind.

Dr. Noble W. Miller has removed from Cuba, Ill., to Adair, Ill.

Dr. F. T. Rudy has removed from Champaign to Columbus, O.

Dr. W. E. Wilkin has removed from Noble, Ill., to Mt. Erie, Ill.

Dr. J. W. Turner has removed from Slegler, Ill., to Peotone, Ill.

Dr. J. Rowe Bemisderfer has removed from Monee to Melvin, Ill.

Dr. F. W. Kerchner has moved from Glen Carbon to Prairietown.

Dr. Sanger Brown has removed his office to the new Mallers Building, Metropolis.

Dr. George A. Stewart has removed from East St. Louis, Ill., to Metropolis, Ill.

Dr. Charles Eberlein has removed from Dunning to Tinley Park, Cook County, Ill.

Dr. Charles F. Sanborn has removed from Dunning to Ellis Island, New York City, N. Y.

Dr. Eleanor Beatty, of Pana, has removed to Utah, where she will practice her profession.

Dr. L. A. Greenfelder has removed his office to the Monroe Building, 104 South Michigan Avenue.

Dr. C. C. Hickman of Cook County Hospital, Chicago, has removed to 3216 Y Street, Lincoln, Neb.

Dr. Anna Medaris, of 1531 Fifth Avenue, Chicago, has removed to 2827 Lehman Road, Cincinnati.

Dr. H. C. Henderson has removed from Milford, Ill., to Carpenteria, Santa Barbara County, Cal.

Dr. Henry T. Byford has removed his office to the Peoples Gas Building, 122 Michigan Avenue, Chicago.

Dr. Charles C. Pinckard has removed his office to the Monroe Building, 104 Michigan Avenue; hours, 11 to 3.

Dr. R. K. Campbell, of Springfield, has removed to Roseburg, Ore., where he will operate a ranch and practice medicine.

Dr. H. C. Will announces the removal of his office from 1206 Tacoma Building to 806 Otis Building; telephone Main 2310.

Dr. Richard J. Tivnen announces the removal of his office to suite 800 Monroe Building; office hours, 10 to 2, and by appointment; telephone Randolph 1622.

Dr. Frederick G. Harris has removed his office from 407 Schiller Building to suite 925 Monroe Building, 104 South Michigan Avenue; telephone Randolph 5931.

Dr. Maximilian Herzog has moved his laboratory from Schiller Building to suite 1604 Mallers Building, southeast corner of Wabash Avenue and Madison Street.

NEW INCORPORATIONS

Via Veritatis, Chicago, \$2,500; general medicine business and dispensary. Incorporators, Richard H. Mather, Willis H. Hutson and Henry A. Hutson.

Metropolitan Hospital, Chicago, \$30,000; conduct a general hospital and give courses in medicine and surgery. Incorporators, Edward H. Krueger, Ward P. Burdick and Charles N. Gartin.

The Sarah Hackett Stevenson and Marie J. Mergler Memorial association, Chicago; to honor the memory of deceased members of the medical profession. Incorporators, Lucy Waite, Eliza H. Root and Sara C. Buckley.

PUBLIC HEALTH

The result of the State Board of Health examinations for physicians held in Chicago, in May, was given to the public on July 23, through the daily press. The list of successful candidates follows:

George Abelio	T. E. Dixon	Ludwig Ilse
J. P. Ahstrom	H. I. Dwyer	H. Izaakowitch
Albert Allen	C. B. Emerson	J. S. Jacobson
C. W. Andrews	C. R. Eskey	J. F. Jaros
Aaron Arkin	M. Etheredge	W. R. Jones
J. F. Armstrong	H. A. Evans	Harry Knott
A. T. Baker	M. C. Fargo	E. W. Koch
C. A. Barrow	C. Fischer	H. L. Koehler
C. P. Blair	F. T. Fitch	W. J. Kofmehl
L. Blanchet	C. A. Fjeldstad	Isidore Kohn
M. Bloomfield	R. B. Fleeger	M. Kostrzewski
H. A. Bohl	Harry Fremmel	S. H. Kraft
J. W. Bolotin	T. C. Galloway	J. H. Kramer
S. Boros	C. N. Gartin	J. H. Linson
W. L. Boyden	H. V. Gould	M. Loebel
H. McP. Brandel	W. O. Gray	G. M. Loewe
E. H. Brandt	J. R. Greer	L. L. Lorenz
L. E. Bratt	Maude Hall	A. B. Luckhardt
F. L. Brown	H. J. Halvorson	J. H. Lynn
E. J. Buchan	J. O. Hampton	R. C. Main
C. A. Burkholder	R. C. Hanchett	H. W. Maltby
F. O. Butler	H. V. Hanson	A. Marmor
E. R. Butterfield	O. Haroldson	H. W. Martin
S. Cahanam	H. W. Hartsell	C. T. Maxwell
Eugene Cary	E. H. Hatton	A. J. McCarey
J. O. Cletcher	Clara Hayes	W. H. McCoach
J. F. Crawford	E. F. Hess	A. E. McEvers
P. M. Crawford	W. F. Hewitt	M. McGuire
A. L. Crittenden	R. F. Hinman	W. G. McGuire
E. F. Czeslawski	S. C. Hogan	F. S. McKinney
S. O. Czolbe	J. H. Hrabik	C. J. McMullen
John A. Dahl	O. C. Huber	M. J. McVay
B. F. Davis	W. R. Hurst	J. J. Mendelsohn
C. C. Dickinson		C. E. J. Miller

F. F. Miller	Louisa Scheid	P. W. Summers
A. L. Morris	C. A. Shaw	G. T. Tootell
R. D. Murphy	C. O. Shepard	T. B. Triplett
R. C. Murphy	Israel Sherry	G. B. Turner
A. R. Mussell	P. F. Snyder	Il. J. Ullman
W. A. Myers	M. Solomon	K. W. Wahlberg
J. R. Newman	C. B. Souter	A. E. A. Wanderer
R. G. Packard	C. E. W. Stanbury	L. E. Weaver
W. F. Peterson	E. J. Stein	A. W. Wermuth
Il. A. Poulsen	I. F. Stein	W. O. Wheelock
P. G. Puterbaugh	F. E. Stokey	P. S. Winner
D. B. Reed	J. Stoland	H. J. Il. Woehlek
W. C. Richardson	L. L. Stone	E. O. Woods
J. H. Robinson	J. F. Strauss	E. P. Zeisler
M. Rosumski	R. C. Sullivan	

Others who passed are: Robert B. Acker, South Chicago; Mabel L. Adams, Fontanella, Iowa; Leslie E. Ambrose, Mt. Olive; Irwin W. Bach, Urbana; James M. Booher, Swissvale, Pa.; Anson R. Braekett, Charles City, Iowa; Don DeWitt Burns, Milwaukee, Wis.; Charles M. Clifford, Cynthiana, Ky.; Wendell Cotton, Sheridan, Wyo.; Raymond Crooks, Gilman, Ill.; Edmund C. Hack, Beecher, Ill.; J. H. Hunt, Glendive, Mont.; Brazilla M. Hutcheson, Mishawaka, Ind.; F. Emerson Inks, Ohio, Ill.; Paul A. Isherwood, West Chicago; Emile Johnson, Aspen, Colo.; Harriett S. McCarthy, Elgin, Ill.; Joseph L. Mershon, Mt. Carroll, Ill.; Paul Morton Miller, Polo, Ill.; John Collins Morey, Oak Park, Ill.; Barbara M. Niekey, Kearney, Neb.; Leonard Niess, Belleville, Ill.; Leonard J. Ostrowski, Joliet, Ill.; Ruby H. Paine, Marengo, Iowa; Bernard B. Parker, Centerville, Iowa; Torrance Reed, Cicero, Ill.; Charles Ricksher, Hospital, Ill.; William E. Smith, Oakland, Cal.; Henry A. Tressel, Pittsburgh, Pa.; Guy S. VanAlstine, Belleflower, Ill.; Clyde E. Vreeland, Richland Center, Wis.; Bert G. Wilcox, Joliet, Ill.; Richard F. Worth, LaGrange, Ill.; Howard O. Young, Thornton, Iowa.

— The committee of the Champaign County Medical Society and the University have completed arrangements for the delivery of certified milk in the Champaign-Urbana districts. An active campaign against tuberculosis will be carried on at Champaign County, and the fight is being helped along by the local press.

— Mr. James A. Patton, who has recently become actively interested in the Medical Department of Northwestern University, at a recent banquet of the students of that institution at the Hotel La Salle, Chicago, advised them to "blow their own horn" in the following language: "You have been told," he said, "of alleged physicians from these midnight medical schools, and I ask, what are you going to do about them? Are not the ethics of your profession drawn a little too tight? The profession has advanced greatly during the last twenty years. I fail to see why you are backward about advertising. The time will come, and soon, I believe, when a physician will be asked, before being employed, 'What school are you from?'"

MARRIAGES

M. S. MARCY, M.D., to Miss Leonora Cullom, both of Peoria, Ill., May 21.

ELLIS KIRK KERR, M.D., to Miss Dorothy Charlton, at Oak Park, Ill., May 25.

ERNEST ARTHUR DALE, M.D., to Miss Edna Johnson, both of Danville, Ill., June 2.

G. CARL FISHER, M.D., Chicago, to Miss Irma Sophie von Bereghy of Harrisburg, Pa., at Hammand, Ind., May 26.

JAMES R. WATTLEWORTH, M.D., of Yale, to Miss Emma Mae Lincoln of Oblong, Ill., May 22.

ELLIOTT CALENDAR DUMARS, M.D., Peoria, Ill., to Miss Edith Woods of Grand Rapids, Mich., June 5.

GLEN E. WRIGHT, M.D., Chicago, to Miss Ella Kelly of Flushing, N. Y., June 8.

WILLIAM F. DEY, M.D., to Mrs. Marion B. Perry, both of LaGrange, Ill., at Kenosha, Wis., May 23.

GEORGE KISSICK WILSON, M.D., to Miss Nellie Dixon, both of Streator, Ill., June 20.

EUGENIA A. MILLER, M.D., and Harry I. Klawans, both of Chicago, June 29.

FRANK A. UPPENDAUHL, M.D., to Miss Mildred J. McGraw, both of Peoria, Ill., July 3.

GEORGE STEWART BOWER, M.D., Galesburg, Ill., to Miss Katherine Barkmann, of Junction City, Kans., June 12.

CHARLES EDMUND ROGERS, M.D., formerly of Manito, was united in marriage to Miss Kathryn Tupper, on the 20th of June at Pocatella, Idaho, where the doctor is now practicing.

DEATHS

OSCAR FRANK PIERCE, M.D., Hahnemann Medical College, Chicago, 1890; died at his home in that city, June 23, aged 55.

J. B. ROBINSON, M.D., Hahnemann Medical College, Chicago, 1879; died at his home in Evanston, Ill., April 21.

WILLIAM KING, M.D., Louisville (Ky.) Medical College, 1882; died at his home in Chicago, July 4.

J. SMITH THOMAS, M.D., of Pleasant Hill, Pike County, died at his home Friday, July 19, 1912, after a few days illness.

JAMES E. SMITH, M.D., Eclectic Medical Institute, Cincinnati, 1878; died at his home in Mt. Carmel, Ill., April 20, aged 73.

WILLIAM EDWARD GORDON, M.D., Missouri Medical College, St. Louis, 1890; died at his home in Old Ripley, Ill., June 18, aged 76.

TALBERT SMIRL (license years of practice Illinois 1892) died at his home in Belleville, Ill., April 19, from chronic interstitial nephritis, aged 78.

EBEN R. STONER, M.D., University of Missouri, Columbia, 1854; died at his home in Griggsville, Ill., June 17, from senile debility, aged 86.

FRANK LESLIE NEMAN, M.D., Jenner Medical College, Chicago, 1906; a member of the American Medical Association; died at his home in Chicago, April 20, from pneumonia, aged 31.

CHARLES T. ORNER, M.D., Jefferson Medical College, 1867; a member of the American Medical Association; died at his home in Bloomington, Ill., April 26, aged 65.

BENJAMIN F. JOHNSON, M.D., Eclectic Medical Institute, Cincinnati, 1883; of Pontiac, Ill.; died in a hospital at Chicago, April 26, after an operation for gall-stones, aged 54.

JAMES VALENTINE CORNISH, M.D., Rush Medical College, Chicago, 1881; of Quincy, Ill.; died in the Jacksonville State Hospital in June, aged 63.

E. K. STONER, M.D., died at his residence in Griggsville, June 17, aged 85 years. Dr. Stoner was the oldest physician in Pike County. He is survived by his widow and four children.

THOMAS A. GUEST, M.D., (license, Illinois, 1899); Harvey Medical College, Chicago, 1901; a member of the Illinois State Medical Society; died at his home in Congress Park, Ill., June 23, aged 44.

WILLIAM RUSSELL LEWIS, M.D., Rush Medical College, 1874; a member of the Illinois State Medical Society; died at his home in Oak Park, Ill., June 27, from heart disease, aged 64.

AUSTIN ELIJAH PALMER, M.D., Bellevue Hospital Medical College, 1869; a member of the Illinois State Medical Society; died suddenly at his home in Morris, aged 65.

EDGAR REED HAWLEY, M.D., College of Physicians and Surgeons, Chicago, 1892; medical director of the Illinois Life Insurance Company for twelve years; died in the Chicago Hospital, May 26, from pneumonia, aged 48.

WILLIAM A. BEIRINGER, M.D., Rush Medical College, 1900; a member of the American Medical Association; assistant to the chair of laryngology in The Chicago Polyclinic; died at his home in Chicago, June 3, aged 40.

JAMES A. MANNON, M.D., College of Physicians and Surgeons, Chicago, 1894; of Sherrard, Ill.; for eighteen years the leading physician of Sherrard; died suddenly at Excelsior Springs, Mo., May 12, of heart trouble, aged 64.

JOHN AUGUSTUS LOGAN, M.D., Rush Medical College, 1878; a member of the Illinois State Medical Society; a veteran of the Civil War; a practitioner since 1872; died in his office in Canton, Ill., June 28, from heart disease, aged 65.

WILLIAM DIETRICK NELSON, M.D., Rush Medical College, 1884; (license, years of practice, Ill., 1878); for more than sixty years a resident of Fulton County, Ill.; died at the home of his daughter in Bryant, Ill., June 18, from senile debility, aged 87.

ADAM A. FRANKE, M.D., Kentucky School of Medicine, Louisville, 1887; formerly a member of the Jasper County Medical Society, and a member of the American Association of Railway Surgeons; local surgeon for the Illinois Central Railroad at Newton, Ill., died at his home in Newton, Ill., June 12, from cerebral hemorrhage, aged 59.

WILLIAM H. WEIRICK, M.D., University of Pennsylvania, Philadelphia, 1866; formerly a member of the American Medical Association; a member of the Illinois State Medical Society; assistant surgeon of the Two Hundred and Thirteenth Pennsylvania Volunteer Infantry during the last year of the Civil War; died at his home in Washington, Ill., June 28, aged 70.

E. K. WESTFALL, M.D., of Bushnell, died of paralysis after a few days of illness in his 74th year. He served as lieutenant in the Sixteenth Illinois during the Rebellion, afterwards studied medicine and graduated at Hahnemann, Chicago, 1867; he served in the state legislature for two terms and was postmaster of Bushnell several times. Services were held at Bushnell, Monday, July 21 and were attended by the Grand Army of the Republic.

JAMES L. LOWRIE, M.D., one of the best known members of the medical profession in Lincoln, died at his home July 23, 1912, at the age of 59 years, following a sickness of but a few hours, his demise being caused by neuralgia of the heart. The final breakdown, however, was the result of a long and serious illness which sapped his vitality, although he had apparently recovered, and for the last three months had been able to resume his practice. Dr. Lowrie was president of the Logan County Medical Society at the time of his death; he had practiced in Lincoln for twenty-three years and was a graduate from the Jefferson Medical College.

HENRY GILES ANTHONY, M.D., Rush Medical College, 1884; a member of the American Medical Association and a well known specialist on skin and venereal diseases; died at his home in Chicago, July 10, aged 52. He was the son of the late Judge Elliott Anthony and after his graduation in medicine, spent five years abroad in the study of his chosen specialty. In 1890 he was made assistant professor of skin and venereal diseases in his alma mater, and professor of skin and venereal diseases in the Chicago Polyclinic Hospital. He was also physician to the Children's Memorial Hospital. He had suffered for several years from tuberculosis of the hip, and his death was due to a toxemia, complicating the tuberculosis.

OBITUARY

DEATH OF ILLINOIS PHYSICIANS IN THE FAR EAST

PAUL CASPAR FREER, M.D., since 1905 director of the Bureau of Science at Manila, P. I., died in that city, April 17. Dr. Freer was born in Chicago, March 27, 1862; graduated from Rush in 1883, and received the degree of Ph.D., University of Munich, in 1887. He served as professor in Owens College, England, and Tufts College, Boston, until 1901, when he was appointed to the Bureau of Government Laboratories at Manila. Dr. Freer was the organizer and editor of the *Philip-*

pine Journal of Science, and was a member of a long list of local, national and international societies and associations of learning. His publications, which were numerous, were contributions of a very high order of merit and covered a wide range of subjects. Chief among the subjects investigated was the action of sodium on ketones and aldehyds; closed carbon chains; phenyl hydrozones; tetrinic acid; esterification of halogen substituted fatty acid; formamid; organic peroxids and their germicidal action; reduction of nitric acid; tetramethylen; gutta percha; Philippine gums and resins; and tropical sunlight. His text-book of chemistry, although over ten years old, was of such a high order of merit that it still is used as a standard reference book by many students of the subject.

The brief outline of the subjects investigated, each of which represents a careful and exhaustive research and a definite contribution to the world's knowledge, indicates love of research and thoroughness, two of the strongest points in the character of this distinguished investigator. His work on tropical sunlight, which had occupied much of his time during the last five years and much of which was unpublished at the time of his death, constitutes one of the most important researches of recent years and could he have been spared but a short time longer should have won him the Nobel Prize.

Like most other truly great men Paul Freer's most useful work is not to be found in his publications but in his influence on other men. No other man in the Philippine Islands has conferred so much honor on the medical profession. This "many gifted" man of science was the teacher, friend and adviser of every investigator of the country whether the subject of his work was medical, chemical, botanical or what not. He constantly gave much of his time to encouraging and helping younger men with their problems and many of the men who have won distinction in various fields of research in this country freely accord much of the credit to the help and advice of Dr. Freer.—*Bulltin of the Manila Medical Society*.

DR. LUCY A. GAYNOR died of typhus fever in Manchu City, Nanking, China, April 7. Dr. Gaynor was born in Ireland, March 24, 1861, and removed with her parents to Chicago when a child; she graduated at the Northwestern University Woman's Medical College in 1891; serving an internship in the Illinois Charitable Eye and Ear Infirmary in 1891 and 1892. She went out as a missionary in 1892, and during her score of years of service at Nanking has established a name and reputation such as given to a few to achieve. Besides serving as a doctor she did a great deal of work as a preacher, and her death was caused largely by her hard work. A large procession followed the remains to the cemetery two miles from Nanking.—*Northwestern Christian Advocate*.

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ORIGINAL ARTICLES

THE LIFE AND WORK OF DR. DANIEL BRAINARD*

PROF. E. FLETCHER INGALS, M.D.

CHICAGO

Ladies and Gentlemen: I have been invited, or rather ordered, to address you on the life and work of Dr. Daniel Brainard, the founder of Rush Medical College, in this celebration of the centennial of his birth. It is difficult to determine why this duty was assigned to me. Possibly it is because I had the misfortune to have been born a little time earlier than any of my colleagues; possibly because more than forty years of service in this institution was supposed to have given me a larger knowledge of the subject than others possessed; possibly because my revered uncle and preceptor, the late Dr. Ephraim Ingals, had been a close friend of Dr. Brainard, had known him intimately and had fallen heir to many of his responsibilities in personal and college business; but I think the real reason lies in the fact that at the time the selection of an orator for the annual commencement of the college was made by the faculty, I was a thousand miles away and had no opportunity to decline the honor.

A few years ago Ephraim Ingals could have given me, first hand, a history of the life and achievements of Dr. Brainard. Three years ago I could have obtained much of the information from Dr. Brainard's son; and a year ago I could have gotten it from his nephew whom I knew very well; but these have now all passed to the beyond. The information I personally have obtained about him has largely been gained from the library of Rush Medical College and from several of Dr. Brainard's published articles, found in the Library of the Surgeon-General's Office at Washington; but for a large part of the facts I am indebted to Dr. George H. Weaver, who made an exhaustive search of the literature and corresponded with many of the old alumni. I do not remember Dr. Brainard, but I undoubtedly saw him during the cholera epidemic in

* The annual address at the Sixty-Ninth Commencement Exercises of Rush Medical College, June 12, 1912, the centennial celebration in honor of its founder.

this city in 1854. My uncle occasionally spoke of him to me and gave me some of the details of his last illness.

Daniel Brainard was born on the 15th day of May, 1812, in the town of Western, Oneida County, N. Y. He was the fifth child in a family of nine, born to Jephthai Brainard, Jr., and Catharine Comstock Brainard. The father of Daniel Brainard was a farmer in comfortable circumstances and of excellent character, while his mother was a most exemplary woman whose influence was deeply impressed on her children, and she doubtless did much in awakening the genius and inspiring the aims of her son Daniel. He was given a good common school and academic education, the latter probably in the Oneida Institute in Whitesboro, N. Y. In 1829 he began his professional studies in Whitesboro with Dr. R. S. Sykes, but he soon went to Rome, N. Y., where he continued his studies in the office of Dr. Harold H. Pope, a distinguished physician of the place. He attended his first course of lectures in Fairfield Medical College, and afterward two courses in Jefferson Medical College in Philadelphia where he received his degree in 1834 when 22 years of age. After graduation he returned to Whitesboro where he remained two years with his preceptor, nominally in practice but mostly engaged in the study of Latin and French, and in professional teaching. In the spring of 1836 he gave a course of lectures on anatomy and physiology in the Oneida Institute, and shortly afterward came to this city.

The Hon. John D. Caton, a lawyer and friend who had studied law in Philadelphia at the same time that Dr. Brainard was studying medicine, thus describes his arrival in Chicago:

"Dr. Brainard rode up to my office on a little Indian pony. He was dressed rather shabbily and said he was nearly out of funds and asked my advice about commencing the practice of medicine in Chicago. I knew he was ambitious, studious, and a man of ability, and I advised him to go to the Pottawatomie camp where the Indians were preparing to start for a new location west of the Mississippi River, and sell his pony; take a desk or rather a small table I had in my office and put his shingle by the side of the door, promising to aid him in building up a business."

Dr. Brainard seems to have made slow progress in securing a practice, the first two years of his stay in Chicago, and I was told by my uncle that he slept on his knapsack until he earned enough money to buy a bed; but in 1838 a laborer working on the canal several miles from the city fractured a thigh bone, and before a complete union had taken place he came to Chicago on foot, which induced so much inflammation that at a consultation held by Drs. Brainard, Goodhue, Maxwell and Egan, it was decided that amputation was necessary. The majority advised amputation below the trochanters, while Dr. Brainard thought the limb should be amputated at the hip-joint. Dr. Brainard was selected to operate, while Goodhue was to compress the femoral artery. The young surgeon removed the limb below the trochanters when he found that the medullary substance of the bone was diseased higher up. He immediately proceeded to amputate at the hip joint. The patient progressed favorably for a

month and the wound was nearly healed when secondary hemorrhage occurred proving fatal.

Post-mortem showed a large bony neoplasm attached to the pelvic bones and surrounding the femoral artery. This case attracted much attention and contributed largely toward giving the surgeon a leading position in the community.

Dr. S. D. Gross, in his "Kentucky Surgery," says that "Dr. Walter Brashear, a native of Kentucky, performed the first amputation at the hip-joint in the United States in 1806. This was eighteen years prior to the case of Dr. Mott of New York." Speaking of Dr. Brainard's case, the late Dr. Hyde said, in "Early Medical Chicago": "It is likely that a number of such operations had been performed in this country, but it is certain that we have records of only two or three at the most."

In 1837 Dr. Brainard opened a private School of Anatomy which he continued several years in his rooms on Clark Street opposite the Sherman House.

In May, 1842, he was appointed to the chair of anatomy in the St. Louis University, where he delivered two courses of lectures.

In 1839 he went to Paris, France, where he remained until 1841. There he spent most of his time in studies preparatory to opening Rush Medical College, for which a charter had already been obtained; but the college was not actually opened until December, 1843, when he assumed the duties of professor of anatomy and surgery. He soon gained an enviable reputation as teacher and operator. In 1852 he again visited Europe and at that time was elected a corresponding member of the Surgical Society of Paris. In 1866 he again spent several months in Europe, but returned in the latter part of the summer, leaving his family in Paris. During the summer cholera had broken out in Chicago but it ceased about the middle of August; however, about October 1 the disease suddenly developed with renewed virulence, causing about 1,000 deaths before the end of the month, and among the victims was Dr. Brainard. On the afternoon of Oct. 9, 1866, he digressed from the subject of his lecture in Rush Medical College to tell the class how to guard themselves against the cholera, and before he retired late that evening he began an article on this subject the first page of which we now have in the archives of the college. He went to bed apparently in perfect health, but next morning had an attack of diarrhea which he checked with opiates. He arose as usual the next morning and had no symptoms of sickness until 9 o'clock when he was suddenly attacked with vomiting and diarrhea. My uncle and other members of the faculty were called, but by 2 o'clock he was in collapse and seven hours later he ceased to breathe.

This melancholy event created a profound sensation in the community. The day was dark and gloomy, the epidemic was at its height and the emblems of mourning overshadowed the public buildings in memory of the officers of the city government whom the pestilence had stricken. Many members of the medical profession gathered at the Court House in testimonial of their respect for the honored dead, and on the morrow a large assembly at St. James' Church told how deeply was felt the loss

that had been sustained. At the meeting of the profession a committee of five was appointed to draw up resolutions expressive of their sorrow and sense of loss. Three of this committee, viz., Drs. Hosmer A. Johnson, Charles Gilman Smith and G. C. Paoli, I counted among my friends in the early years of my practice and I feel sure they were sincere in their expressions about Dr. Brainard. Dr. Paoli voiced the opinion of the profession in the following words:

"He was no ordinary man. Highly gifted by nature, his powers were cultivated by study, and from pure love of the profession he devoted himself with untiring zeal to the work of instruction. As a surgeon he had few equals, as an operator he was cool, cautious and bold. As a lecturer he possessed to a remarkable degree the rare talent of profound clearness in communicating his ideas to his listeners . . . and excelled all other lecturers I have heard in condensing the greatest amount of instruction in the fewest words."

Physically, Dr. Brainard was tall, well proportioned and strongly built. He was dignified almost to reserve, and among those who did not know him, this gave him the reputation of being cross and crabbed; but this was an error. His words were few but to the point. One of the old alumni writes: "His appearance in the class-room was quiet and unassuming. Without preliminaries he announced his subject, and in a concise manner proceeded to elucidate his theme, with which he was always perfectly familiar; his teaching was exceedingly plain and practical and free from technicalities. As a public speaker he was forceful and always commanded attention. Although the rules of aseptic and antiseptic surgery were then unknown, he was extremely particular in his operations to have well-cleaned apparatus, hands and instruments."

At the time of his death he had been engaged on an extensive surgical work which remained unfinished; but those who heard him and witnessed his skill as an operator remember him as one of the most eminent American surgeons. He was a close student, an original and independent thinker and an active investigator.

In 1849-51 he used solutions of iodine and iodide of potassium by injections into serous sacs on the theory that changing the quality of the fluid would stop further effusion and promote absorption, and he adopted this method for the cure of spina bifida. He also made numerous experiments with various substances in the hope of finding a cure for cancer. He applied these directly or injected them into the blood current. At that time he treated cancer, when practicable, by removing the growths thoroughly, and after what seemed successful experimentation on animals, by the administration of lactate of iron by the stomach and by injections of the same every six to ten days into the veins. Most of these cases seemed to improve for a time, but afterward lapsed into the previous condition. One fact, however, was developed by the injections, namely, that some substances may be thrown with perfect safety directly into the venous blood, which if injected into an artery or into areolar tissue would produce most destructive results. Several times during these experiments a few drops of lactate of iron which were allowed to infiltrate areolar

tissue invariably destroyed it, leaving an ulcerated surface. His treatment for ununited fractures is the best known of his surgical achievements; but his most important work and one that has had a greater influence on the medical profession than he even dreamed of, was the founding of Rush Medical College. The charter of this institution was granted by the legislature of Illinois in March, 1837, but the trustees did not appoint a permanent faculty until October, 1843. The first session of the institution was opened Dec. 4, 1843, at which time Professor Brainard delivered the inaugural lecture. In that address on the first day of the first session of Rush Medical College, he said:

"We have chosen the subject of 'Institutions of Science, Their Influence in a Community, and Their Claims on the Fostering Care of the Public' . . . because of the sovereign influence exercised by public opinion which holds the place of supreme power in our own country. Elsewhere such 'appeals of argument or persuasion' were addressed to governments where princes or the munificence of private individuals laid the foundations of universities, while in this country, 'but especially in the West, is it essential that the public mind should be directed to the founding . . . of institutions of science.'

"It were easy to see that every class of citizens is interested in the establishment of a medical school at this time and place. We might appeal to men of business and capital, and by rigid calculation of the advantage of such institutions, convince them that it is to their interest to aid in this promotion. We might point them to Louisville or Lexington where, without many of the advantages of location which we possess, schools have been established which contribute materially to the prosperity of those cities.

"We might appeal to the poor. The establishment of a hospital or dispensary where they may receive gratuitous aid without subjecting themselves to disagreeable personal obligations, or being associated with public paupers, is an essential part of our undertaking. We might appeal to the benevolent. What heart sharing the common sentiment of humanity but would delight in contributing to an undertaking whose sole result is the relief of suffering."

In pointing out the advantage to young men of a medical school in this community he said: "I might bring forward in our own profession the example of the first and greatest of its minds, that of John Hunter, who was a cabinet-maker before commencing his studies. . . . Velpeau, one of the most eminent of living surgeons, was also a mechanic, and I have heard him . . . speak of the time when he was a blacksmith."

"The health, the happiness and the life of your dearest friends, and your own may, and will some day depend on the skill of some member of the medical profession"; and this thought we wish to impress on the public mind to-day in urging the supreme importance of the highest type of medical education in this city.

He continued: "To elevate the standard of skill and knowledge in the profession, to excite an honorable emulation among its members, to

disseminate in this new region the principles of medical science in its perfected state — such are the objects held in view by the founders of this institution.”

How well this ideal has been followed by the men who have devoted their lives to this work during the sixty-nine years that have elapsed since these words were uttered is attested by the lives and work of thousands of the alumni of Rush Medical College; and to-day the zeal, the devotion and the work of the men who are carrying out the objects of the founders of this college are an honor to the profession and to the institution which was opened on that day.

He stated that at that time by some the project was considered premature and it was argued that students could not be obtained, teachers procured, or suitable buildings rented, and that it was useless to present the advantages of education to the public until their physical wants and their resistance to the encroachments of hunger and cold were satisfied. He believed the time for such objections had passed and with remarkable assurance and confidence he said of that day in the West, and in this city, which then had only about 4,500 inhabitants; “Nowhere are the people at large so surrounded with the comforts of life; nowhere are there such numbers of youth whose means enable them to pursue literary studies, whose minds are so open to noble impressions, but with so few institutions to lead them on and gratify their desires. The present then is emphatically the time when schools of every kind, but especially those of the professions, should be established.”

The opinion that suitable teachers could not be found in the West he said “is alike unfounded.” and “next to the merit of making great discoveries in science, is that of extending them in regions where they would be otherwise unknown.”

Dr. Brainard felt very pessimistic regarding the influence of national and state examining boards in raising the qualifications of physicians: but when we consider the marvelous things that have happened during our own lives — things that no one could have foreseen, we cannot criticize him for not anticipating the real benefits from these sources that are now apparent; although they did not come for nearly half a century. But even to-day the aim of most of these boards is far below the ideals for which this institution is working.

At that time he insisted on the importance of preliminary education, high moral character and general culture. He said: “The natural qualities most requisite for a physician are talent of observation, industry, resolution, and a benevolent disposition.”

Dr. Brainard firmly believed in specialization and advised students after having gained a good general knowledge of medicine to “select that branch for which they thought themselves best suited and to embrace it in every detail.” He said further: “Every improvement, moreover, is the result of studies confined to some particular subject.” and years afterward he used to say that success was assured to the man who knew how to do one thing better than any one else. In an address to the American Dental Association in 1865 he urged more forcibly the importance of

specialization because it was impossible that any man should master medical science in all its details, and he named numerous parts of the body and several diseased conditions that were worthy of the whole time of some men. Among others he spoke of fractures which demanded a great deal of special study, and better appliances. In illustration he said that a great many appliances used in treating fractures of the leg, called "fracture boxes, were no better than dry goods boxes, and simply served to conceal from the surgeon the position in which the limb might happen to lie"; and he said that the reason for this was that no man had ever yet devoted himself to fractures as a specialty.

He said: "The principle that I wish particularly to assert is that the medical profession in order to be most useful, in order to acquire its due influence over the community, in order to perfect its knowledge of the nature and treatment of diseases, must adopt a special course of study; each individual member embracing that course which he judges on the whole to be best adapted to his faculties, and leaving out to a certain extent others for which he has no qualifications. I advocate special studies and special practice; and although the words have been somewhat discredited, I advocate specialties and specialists."

In an address to the graduating class of Rush Medical College, session of 1848-49, Dr. Brainard said:

"In every climate, in every place, wherever disease is found, there is a physician striving to relieve it; and whether successful or not his mission is nevertheless divine and charitable, soothing and consoling beyond the power of words to express. . . . Medical science embraces every known method of curing disease. Whatever may be the principle, if it be found useful it is adopted."

This is the foundation on which this institution was laid and on which its instruction has ever been given. We say to you: "Prove all things and hold fast to that which is good."

In the same address we find a somewhat amusing evidence of Dr. Brainard's confidence in Chicago, and in western medical colleges (which at that time meant every one this side of the Alleghanies). He said: "The statement has recently been made by a Dr. Holmes, professor in a not very flourishing medical school at Boston, that the multiplication of medical schools at the West is doing great mischief in the profession. . . . For a country possessing all the advantages for containing a large population, calculated from extent and situation to be the center of the republic . . . with all its advantages, to be dependent on some villages a thousand miles off for its physicians, would certainly present an anomaly in the general order of things"; and further: "But a few years since, the place we inhabit was on the extreme verge of civilization, and stretching far away to the west was a desert scarcely trodden by the foot of civilized man. Now the emigrant turns from our crowded streets . . . to the far distant . . . shores of the Pacific ocean."

To appreciate this you must recollect that then Chicago was a town of only a few thousand inhabitants and that it had no railroads to the

east or west and nothing was known of many marvelous things that have developed during the lifetime of your present teachers.

In the same address he said: "It is now seven years since the germ of our medical college was planted," when "six individuals were found willing to listen to the teachings of a private course on a single seat: the next year another was added and the third year some twenty persons were in attendance on our course. . . . Step by step has the school advanced, until its alumni constitute a large body of the most respectable practitioners of a wide extent of country. . . . Our infant institution has already acquired a development which is a guarantee of its future advancement. It is associated with the destinies of a great and powerful city, and its prosperity and continuance will be commensurate with her growth and duration. It can never perish."

To-day it is nearly three-quarters of a century since this germ was planted. The city with whose destinies it was associated has grown from 5,000 to nearly 3,000,000. Our classes gradually increased until at one time there were a thousand students in a single year, and our alumni, counted by thousands and thousands have occupied the front ranks of the profession not only in this country, but they have filled honorable positions all over the earth.

But far more important than growth in size and numbers has been our advance in the character of instruction, in the facilities afforded to gain a knowledge of the healing art and in the additions which this college is making to medical science.

Dr. Brainard was one of the organizing members of the Illinois State Medical Society, and an early member of the American Medical Association, of which he was vice-president in 1850.

Nov. 28, 1853, Dr. Brainard read before the Academy of Science in Paris a paper on experiments on "The Venom of Rattlesnakes, the Effects of the Venom, and the Means of Neutralizing Its Absorption," and three months later he presented a paper before the same Academy by himself and Dr. Greene, on "Iodin as an Antidote for Curare." Dec. 6, 1853, he read a paper before the Society of Surgery of Paris entitled "On the Injection of Iodin into Tissues and Cavities of the Body for the Cure of Spina Bifida, Chronic Hydrocephalus, Edema, Fibrinous Effusions, Edematous Erysipelas, etc." At this time he was made a corresponding member of the Société de Chirurgie of Paris. Dr. Brainard was president of the Illinois State Medical Society in 1854. As his presidential address he read a paper entitled "Essay on a New Method of Treating Serpent Bite and Other Poisoned Wounds," in which he introduced much of the material embodied in his earlier reports in Paris. The paper was based on numerous experiments on pigeons, cats and dogs with putrid matter, such as that inoculated in dissecting wounds, woorara and the venom of serpents. He spoke of the manufacture and action of woorara, known also as the American poison (used on arrows) and gave several reasons for his own belief that the active principle of this poison was the venom of serpents as follows:

"1. Its effects on birds and animals are strikingly like those produced by the venom of the rattlesnake; and in many cases no difference can be perceived between them.

"2. These effects are entirely unlike those produced by the vegetable alkaloids.

"3. Iodin neutralizes it as it does the venom of serpents, but has no such effect on vegetable alkaloids.

"4. It is like the venom of serpents, innocuous when taken into the stomach, except, perhaps, when used in very large quantities, or in circumstances very peculiar. This is not the case with any known vegetable poison.

"5. It is well known that the poison used by the North American Indians for their arrows is that of the rattlesnake. I have learned this from such varied sources as to leave no doubt on the subject."

His third reason is of special interest because of the positive statement regarding the effects of iodine in neutralizing poisons.

His method of treatment consisted of:

1. Application of cups on the part, or of ligatures around the member wounded, so as to arrest absorption.

2. In injecting or infiltrating into the subcutaneous tissue the solution used as an antidote.

He directed that the cups be applied a short time before the solution was employed so as to fill the tissues with fluids and prevent the injected liquid from producing abscess by mechanical injury. The cups were kept on five or ten minutes after the antidote had been injected in order to allow time for it to come in contact with the poison before it entered the circulation; but where much swelling and effusion had taken place before treatment could be applied, the application of cups was unnecessary as the fluid injected would in that case pass freely through the tissues without the cupping.

He used as the antidote a solution of iodine, 10 gr., and iodide of potassium, 30 gr., in an ounce of distilled water. In recent cases he advised that 1 dram of this solution be injected, if necessary at several points so as to infiltrate the tissues with it for the space of an inch around the wound. He also applied the solution on the surface. In cases where there was already extensive swelling he reduced the strength of the solution by diluting it three or four times, but he does not state whether he used more or less of the solution.

For injecting the fluid he employed a small trochar to which, after it had been introduced, he fitted a syringe that had been filled with the solution. The solution was gently pressed in drop by drop. At that time there were no hypodermic syringes such as we now have and cups were in common use. Many of you may never have seen a cup used and very few physicians now possess these instruments; but it seems to me that with a hypodermic syringe the tissues could be easily and quickly infiltrated with the solution, without cupping, and you will note that when swelling had already occurred he did not consider the cupping necessary.

As iodine attacks nickel and some other metals very quickly, it would be best to have a glass hypodermic syringe. The needle might possibly be ruined; however, I have used hypodermic needles with solutions of iodine repeatedly without injuring them very much.

This treatment never came into general use, indeed I doubt very much whether many physicians have ever heard of it; but it proved so very effective in his experiments that I have great confidence in it and whenever I travel in regions where there is danger of snake-bite I carry with me a solution of iodine and a hypodermic syringe instead of a bottle of whisky, and I earnestly urge physicians to adopt this method of treating poisoned wounds. It would doubtless be equally effective in the prevention of rabies if it could be promptly applied, and I believe it should be used for dog-bites instead of the forms of cauterization that are commonly applied.

Dr. Brainard stated that not more than one in ten of the wounds caused by the most venomous serpents proved fatal. His experiments seemed to prove that the methods of cauterization with nitrate of silver, ammonia or the mineral acids did not in any way antidote the poison and had no influence excepting possibly in limiting the amount of absorption. The influence in this direction would be nothing whatever if a few minutes had elapsed after the injury before the treatment could be applied. His experiments caused him to say with reference to the very free use of alcoholic stimulants as an antidote for snake-bite that they did not prevent but sometimes hastened death.

He carefully described his experimental technic and the effects of the venom on the blood, and repeated his experiments before the society. Among his conclusions he states that to be effective the antidote must be infiltrated into the tissues and that "this infiltration can be performed without causing loss of substance, or producing either eschar or suppuration." I am pleased to note that he freely acknowledged his indebtedness to the late Dr. Hosmer A. Johnson of this city, who assisted him in his experiments, and to others who had contributed in some way to this research.

I wish to-day to impress on each of you that the man who attempts to further his own reputation by neglecting to give all possible credit to others is making a great mistake; and I wish specially to urge you to ever manifest the magnanimous spirit so constantly shown by the heads of our pathologic and medical departments, and others of my colleagues, in giving the fullest credit to their subordinates.

In the article just referred to we find that Dr. Brainard by his experiments discovered the surpassing value of iodine as an antiseptic, although he did not know the bacteriologic reasons for its effectiveness, that were discovered a quarter of a century later by Pasteur and which were first applied in surgery by Lister.

At the meeting of the American Medical Association in St. Louis in 1854 the Committee on Prize Essays reported that nine essays had been submitted but that they had awarded only one premium, which was to the essay entitled "An Essay on a New Method of Treating Ununited

Fractures and Certain Deformities of the Osseous System." The sealed envelope accompanying this essay was then broken and the author found to be Daniel Brainard, M.D., of Chicago. This essay appears in the *Transactions of the American Medical Association* for that year. It bore a motto in French of the sixteenth century from Ambroise Paré which, liberally rendered into modern English, reads: "And notwithstanding all the pains I have heretofore taken, I have reason to praise God in that it hath pleased Him to call me to that branch of medical practice, commonly called surgery, which can neither be bought by gold nor by silver, but by industry alone and long experience." The essay occupies forty-four pages of the *Transactions*, and is one of the classical medical articles of America. The object of the essay, as stated in the introduction, is: (1) To establish, by experiment, the principles on which the treatment of ununited fractures should be conducted, and to show that these principles are applicable to the human subject. (2) To propose a new method of treatment for certain deformities which result from true ankylosis, union of fractures in an angular position, rachitic curvature, etc. The article is thoroughly illustrated by nineteen copper plates designed from Nature.

Earlier in the year Dr. Brainard had published a similar article in French entitled "Mémoire sur le traitement des fractures non-réunies et des difformités des os," but this was less complete than the prize essay, and was distributed only to scientific societies and a few friends.

On the treatment of non-uniting fractures he said: "Without doubt the aim should be to place the old fracture in the condition of a simple and recent fracture without contusion and disorder of the soft parts. In oblique fractures I pierce the skin with an instrument (a perforator of my own invention) in a manner which will permit me to pierce the extremities of the fragments of bone, to freshen their surfaces, and pass through the tissues that are formed between them. After this first operation I disengage the instrument from the bone without taking it from the skin. I then change its direction and make a new perforation, and I repeat this as often as I judge necessary. In most cases it is preferable to commence by two or three perforations only, in order that effects produced may not be too energetic; on removing the instrument one will take care to apply collodion over the skin wound." In non-oblique fractures the technic was somewhat different. He says: "Division of the callus alone has little effect if the bony surfaces are not rasped at the same time, but I have demonstrated by experiment that if one makes several deep wounds in the bone, durable results will be obtained which will lead to a good result and put the fragments in favorable condition for reunion. After the operation it is necessary to apply splints or a convenient apparatus to immobilize the parts, and it will be necessary at times to make other punctures. In none of our experiments on dogs and rabbits have we produced necrosis, suppuration or intense inflammation. It shows us that the small parcels of bone left in place by the perforator do not suffice to produce suppuration, and far from retarding a cure, it is very probable that these small fragments acting as foreign bodies, which can

be absorbed or unite themselves to the bone, have a great influence on the result and success of the operation. These effects are so rapid that in the cases where I have employed my method, a week has never passed without a decisive amelioration. This has led me to believe that it is a good procedure to hasten the union of simple fractures as well as those which have been greatly retarded." Here follows citation of cases treated and cured by his method, followed by a chapter on subcutaneous perforation applied to the treatment of certain deformities, with copper plate illustrations.

These various activities gave Dr. Brainard an international reputation not only as a surgeon but as an investigator. In 1855 the chair of surgery in the University of Pennsylvania was vacant, due to the resignation of Professor Gibson. Dr. Brainard was a candidate for the appointment, and was the almost unanimous choice of the faculty and was by them recommended to the trustees. "Personal considerations, however, and other influences prevailed with the trustees rather than the wishes of the faculty," and Dr. Henry H. Smith of Philadelphia was elected professor of surgery.

In *The Illini* Clark E. Carr describes a trip during the Civil War on a river boat from Cairo to Savannah, where the wounded had been taken from Pittsburg Landing. He speaks of Dr. Brainard several times, once as follows: "At the head of the corps of surgeons was Dr. Daniel Brainard, the most eminent surgeon in Chicago."

In closing I wish again to quote from Dr. Brainard's words, which are as appropriate now as they were true when he spoke them to the graduating class of 1849. He said: "To you, young gentlemen, about to enter on the practical duties of life in a profession so useful, honorable and charitable as ours, life seems to present attractions not often found in similar circumstances. The field of usefulness is rich, vast as the ambition of man can desire. Your life, if you worthily follow your profession, is to be one of perpetual charity, of daily relief to suffering. . . . In proportion as you devote yourself to it will be the return you may expect to receive. Set your mark high. Fear no obstacles. . . . Whatever may be the result no pursuit is more worthy of occupying your lives than the acquisition of knowledge and its application to the relief of human suffering."

THE MENACE TO THE PUBLIC BY FEEBLE-MINDED PERSONS LIVING OUTSIDE INSTITUTIONS *

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At the government census of 1890 the number of feeble-minded was reported as 95,000, of whom only 5,200 were found in special institutions; and another 2,500 were in asylums for the insane. The number of feeble-

* Read before the Chicago Medical Society at its meeting of April 18, 1912, and before the Cleveland Academy of Medicine on April 19, 1912.

mind persons in the United States, that is those so pronouncedly feeble-minded as to stand in need of institutional treatment, was estimated in 1904 by John Koren, expert and special agent for the United States Census Bureau, at 150,000. Koren reports only about one-ninth of this whole number, or about 17,000, as residing in institutions especially intended for the feeble-minded. He further estimates that an additional 16,000 feeble-minded persons were inmates of almshouses. In round numbers then, according to this estimate, 33,000, or one-fifth of the entire number of feeble-minded persons in the United States, were found in institutions; and four-fifths, or 120,000, were living outside institutions in 1904. The number of feeble-minded in special institutions had grown from 5,000 in 1890, to 17,000 in 1904.

The following table taken from Koren's report indicates the total number of feeble-minded in institutions in 1904, and shows as well the number in the several states. It will be seen that the several states provide very differently for their feeble-minded and that many of them have not yet provided any special accommodations for them.

FEEBLE-MINDED IN INSTITUTIONS, 1904

State	Total Number	Enumerated Dec. 31, '04	Admitted 1904
Continental United States	16,946	14,347	2,599
North Atlantic division	6,651	5,699	952
New Hampshire	72	64	8
Massachusetts	995	878	117
Connecticut	262	219	43
New York	2,594	2,135	459
New Jersey	527	460	67
Pennsylvania	2,201	1,943	258
South Atlantic division	397	338	59
Maryland	156	162	14
Virginia	46	35	11
West Virginia	175	141	34
North Central division	8,859	7,459	1,400
Ohio	1,307	1,125	182
Indiana	1,118	1,036	82
Illinois	1,507	1,283	224
Michigan	657	516	141
Wisconsin	710	611	99
Minnesota	1,071	888	183
Iowa	1,152	981	171
Missouri	354	250	104
North Dakota	86	..	86
South Dakota	77	51	26
Nebraska	386	337	49
Kansas	434	381	53
South Central division	224	189	55
Kentucky	224	189	55
Western division	785	662	133
Colorado	33	14	19
Washington	124	81	43
California	638	567	71

Dr. Jos. Neff, Director of Department of Health at Philadelphia, has devoted much time and labor to investigation of the problem of the feeble-minded, especially as it presents itself in Pennsylvania, and has published several very valuable pamphlets on the subject to which I must refer. Dr. Neff estimates that there is one feeble-minded person to every 500 of population in Pennsylvania. The statistics of Tredgold for England indicate a much higher proportion of feeble-minded for that country.

In this estimate merely backward and deficient persons of types not greatly pronounced are not being considered. But enough has been said

to show that the vast majority, at least four-fifths of all pronouncedly feeble-minded persons in the United States, are living outside institutions; and of the other fifth only one-half of them are living in the proper kind of institutions, i. e., institutions especially equipped for the feeble-minded; and the other one-half are living in almshouses, which are not properly adapted for these individuals and where they cannot be properly protected. It is the chief object of this paper to call attention to the dangers and risks which society encounters by reason of the fact that the great majority of feeble-minded persons are living outside institutions and to advocate what appears to me as the proper remedy for this evil.

What are the dangers to the public from feeble-minded persons living outside institutions? These dangers are manifold and most of them very obvious. The first and most striking risk to society is the propagation of feeble-minded by individuals of their kind. I believe it is now so well established that the most conspicuous cause of feeble-mindedness is heredity that no argument need be used before this audience to support this proposition. The famous Jukes family with their long history of generations of feeble-mindedness, degeneracy, prostitution and criminality is well known. The recent work of Dr. H. H. Goddard, of the New Jersey Training School for Feeble-Minded Children at Vineland, N. J., shows in a clear and convincing way the terrible effects of heredity as the cause of feeble-mindedness—and that feeble-mindedness very often means vagrancy, degeneracy, prostitution and criminality.

Dr. Neff has shown that feeble-minded women in general are more prolific than normal women and that practically all of them become mothers soon after the age of puberty. To support his contention he has cited many illustrative cases.

Hence it becomes perfectly obvious that the greatest source of production of feeble-mindedness is propagation of the feeble-minded by the feeble-minded. Imbecility is never cured—once an imbecile, always an imbecile. Can it be prevented? It would appear clear that our only hope of reducing it must be in the prevention of it. And it would appear plain that if we can prevent the feeble-minded from propagating their kind we will do much—very much to prevent and decrease imbecility.

Can this be done? Should it be done? How can it be done? I propose to address myself to these questions. But before doing so I must point out other dangers to the public by reason of imbeciles residing in its midst, though they shrink into secondary consideration as compared to this first great danger which I have just indicated—that of propagation of their kind.

While many feeble-minded persons are regarded as harmless aside from the danger of begetting offspring, it must be remembered that probably the majority of them possess more or less degenerate instincts and are capable of committing murder, arson, rape and other serious crimes. Moreover, the great majority of them are inadequately cared for and others are ill treated or abused in various ways.

What should be done with this terrible problem of the feeble-minded before us? We have seen that the capacity of specially adapted institu-

tions for the feeble-minded grew from 5,000 in 1890, to 17,000 in 1904; so it would appear that the need of these special institutions is being more commonly and generally recognized. And the good that they have done and are doing becomes obvious to those who have visited them. I can speak very strongly for The Institution for Feeble-Minded at Polk, Pa., which, through the courtesy of Dr. J. Moorhead Murdoch, the superintendent, I have several times visited. In such institutions the conditions for the feeble-minded are ideal. But it is seen that the various states have inadequate—often pitifully inadequate—accommodations for the feeble-minded. What shall be done?

I would advocate that the several states shall as speedily as possible possess themselves of adequate accommodations for feeble-minded persons within their borders. But as a preliminary step to this end, I would advocate that each state ascertain the name and address of all feeble-minded persons residing within its borders. Diligent search over two or three years would probably bring out a fairly complete list of feeble-minded persons. For we must remember, "once feeble-minded, always feeble-minded." And the obviously feeble-minded which is now considered could with a little pains and industry be ascertained. And then I would have the law so shaped that the state, through a proper board and executive officer, should determine the question as to whether a particular feeble-minded person should be allowed to remain at home or whether he should go to an institution, subject of course to the limitation of accommodations. At present in the state of Pennsylvania (and I presume it is likely the case in other states) the question of whether a feeble-minded person shall go to an institution or not, or if already there, as to whether or not he shall remain there, is in the hands of the parents of such a person—the very individuals who are least competent to decide it rightly. I have had numerous experiences where I have strongly advised that a feeble-minded child be sent to the institution at Polk for the good of the child, for the good of the parent and for the good of the public, and where the parents have declined to take the step. Also I have had the experience of seeing feeble-minded persons taken to an institution and brought away from it against the advice of the superintendent and of myself. In short, this very important and fundamental question of admission and discharge from institutions for the feeble-minded is decided by the parents of the feeble-minded; and the institution or the family physician has only advisory powers. This is obviously and radically wrong and should be corrected; it could be corrected if the state made a census of all feeble-minded and for the good of its citizens took authority to send any feeble-minded child to the proper institution and compelled him to stay there until it saw fit to release him. All this is only right and proper; and if the state wishes to protect itself from the propagation of imbeciles by imbeciles and from the dangers of arson, rape and other crimes, and if the feeble-minded persons are to be protected from neglect, cruelty and abuse, such measures as I have indicated must, I believe, be taken.

All this means a great undertaking as I am well aware. But surely it is best to face this great problem fairly and squarely as it exists before us. Other questions come up in connection with this question. As for example, whether sterilization of feeble-minded men and women is right and proper and expedient. This thing might be done and might have its proper place in a comprehensive state law; but I regard it as secondary in importance, but if needful it too should be employed. No imbecile woman of child-bearing age should be allowed to live outside an institution unless she is sterile.

To reiterate, I believe that the state should make as complete a census of the feeble-minded within its borders as possible and say which feeble-minded persons shall be in institutions and which shall be allowed to remain at home and shall have power to keep those already in institutions in them as long as it may deem it best for the public and the imbeciles concerned. And should sterilization be found necessary to prevent propagation of imbeciles, the state should not hesitate to use it.

BORDER-LINE INFERIORITY *

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Since the world began Nature has been making "mistakes," has very frequently failed to reproduce the highest type, and especially is this true of her most specialized product, man. The evidences of this failure are physical, mental and moral. When the failure is practically complete the result is perfectly apparent—a monster or a blithering idiot, and from these forms, range upwards idiots of a thousand varying degrees, each one bearing a number of more or less evident physical stigmata, such as: Disorders of one or more of the cranial nerves; residuals more or less marked of focal brain lesions such as spasticities, pareses, athetoses, incoordinations; increased hairiness either of the entire body or in localized areas; asymmetrical developments; malformations such as deformed ears, high arched palates, receding foreheads and chins, deformed extremities, etc.

In all these subjects rather superficial examination brings out quite well marked intellectual defect; that is, it establishes a mental deficiency in one or more fields, which deficiency depends on anatomic defects, gross or minute, of the central nervous system and evidences itself in difficulties of perception, failures of mental elaboration, etc. Sensory stimuli are poorly transmitted, and more than this they do not give rise to what we commonly speak of as extended trains of thought. Necessarily with this dearth of mental activity a more or less vegetative existence ensues, though by dint of training, a number of pathways may be opened up along which

* Read in a symposium on Mental Diseases at Hotel La Salle, Chicago, April 18, 1912.

mental activity may travel in a routine manner; and indeed, by virtue of inherent adaptability some such reactions in certain individuals may even acquire an almost uncanny facility — as witness those wise fools who do enormous sums in mental arithmetic, repeat musical melodies by ear with the certainty of a phonograph, or give accurate data from memory concerning an incredible number of famous people. Prodiges these subjects may be counted, but still they remain essentially fools because their knowledge is useless in that there is with it no productiveness, no spontaneity. For this reason these individuals must forever remain to one side, if not actually outside, of the activity of normal endeavor, capable of a certain amount of education, very often self-supporting, but always in a sense, dependants, because they lack initiative and hence must look to others for guidance.

Next higher in mentality than the idiot, as ordinarily reckoned, is the imbecile, who possesses a fertility of resource and spontaneity of action not found in the grosser defectives. Generally speaking, imbecility is counted as covering the ground between idiocy and the normal, although those who deal with deficient children quite widely recognize an arbitrary group of so-called *Morons*, situated between the imbecile and normal individuals.

Sollier, French writer, has sought, however, to establish the imbecile on a separate footing from the idiot, basing his differentiation on the contention that there exists in this group of defectives a qualitative defect rather than the quantitative one found in the idiot. That is, while in the individual I have previously described as an idiot there is a failure of mental activity more or less marked because of some structural defect of the nervous system which prevents the proper transmission and assimilation of stimuli, an end result often quite similar in appearance is brought about in quite another group of defectives by what this writer terms, "*a primary instability of attention.*" These individuals do not pay attention to any one thing for a length of time sufficient to insure the proper assimilation of perceptions and the production of an interaction of higher centers, or what we commonly speak of as reflection, logical thought, etc. This instability of attention naturally results in disordered conduct, because a shifting interest of varying quality and quantity renders the individual's conduct unreliable, inconsistent and unproductive.

On the appearance of a great comet in the skies the savage gives offering to placate a vengeful demon, the philosopher weighs the head and measures the tail, while the saint meditates on the glory of God thus revealed. All react in the light of their training with a certainty that marks them as dependable men, and it is thus that we establish the so-called "normal." It is what can be counted on in the great majority of cases that fixes the norm. The ignoramus, the savant and the religionist all react in totally different ways, but each, as it were, runs true to form. Certain stimuli can be counted on to produce in each one of them practically the same effect as in the remainder of his kind living in a similar environment. The quality and quantity of their interest

remains on the whole fairly constant. By virtue of heredity and training the primal instincts of reproduction, self-preservation and hunger have been so shaped as to form a mold, that while elastic to a certain degree, still gives to whatever is poured into it a recognizable form, which form is similar in its general contour to the composite impress of the great majority of all individuals existing under similar conditions.

In his "imbecilic" group Sollier designates the defect as qualitative, in contra-distinction to the quantitative defect occurring in idiots. Roughly speaking, this means that a high-grade imbecile may, at different times, react normally to almost any sort of stimulus, but that to any one stimulus he may and does react in many different ways at different times, so that his conduct as a whole is quite lacking in that dependability which has been pointed to as an indicator of normality. In this regard his conduct is vastly different from that of a high-grade idiot, which may, on the whole, be fully as consistent as that of the so-called normal individual, but fails of the normal standard because of the absence of an ordinary degree of perception and subsequent mental elaboration. Both of these defective types fail to exhibit what is ordinarily called good judgment or common sense—the imbecile because his interest is shifting and undependable—the idiot because anatomic defects in his nervous system prevent the complete carrying out of mental processes.

I realize that the above views are not agreed with by very excellent psychologists who have to deal with defective children, because the distinction is by no means always clean cut, in fact is not always possible, and is not always necessary for purposes of instruction; but I do believe the principle holds in the higher so-called moron type, and it is in the twilight zone where these approach the normal, that we not infrequently meet with an imbecile type so obscure as to seemingly render the bald term of imbecile inapt.

There is probably no good reason why the term *degenerate* should not be more widely used in connection with these individuals, save that by it we have commonly come to understand a more or less well marked throw-back in the shape of conduct or tendencies quite anti-social: to-wit, sexual offenses, kleptomania, habitual offending, etc. By the term "higher degenerate," Magnan, the French author, understands an individual who though as a whole subnormal, may grade even above the normal in some ways. "In him," as this writer so well expresses it, "the higher faculties have acquired a greater development than in the ordinary degenerate, but the bizarre and multiple adaptation of these faculties at the same time reveals their development to be unequal, thus constituting a veritable functional disorder. His abilities, powerful as they are, remain practically useless because he has not the power to orient and co-ordinate them. His thoughts and acts are in constant antithesis, the man of to-day is not the one of yesterday. Always there is a lack of logic, an absence of continuity. Reasoning the most irreproachable results in action the most incoherent; pettiness of final decisions effaces the grandeur of conceptions. Always vacillating and without plausible motive, the unstable individual, on the contrary, astonishes one at times

by an obstinacy which nothing daunts; one beholds the most resolute action abruptly arising from the most vague sort of thinking.

"In fact, one often meets with an extraordinary fecundity of imagination, but no less there exists with this, an oddly restricted thinking. Along with transcendent conceptions one finds infamous preoccupations — moral theories the most sincere contrasting with the acts of absolute immorality; and thus, in spite of his intellectual development, the degenerate must ever be the prey of his passions, of instinctive impulse the most gross, which he cannot master."

In this clever characterization of Magnan's note stress is laid on the lack of proper adaptation to circumstances due to a lack of coordination of mental abilities which may be normal or even above normal in themselves. How this occurs in imbecilies where interest is an uncertain quantity, I have already endeavored to point out.

We look for genius to be eccentric, in fact, we rather expect to find a great man weak in many ways, or very weak in some one way. In fact in men of genius an imbecilic symptom complex can often be traced in the disordered manner in which life is carried on — save in the one direction where interest is most constant and ability supranormal. Save along this line there is not infrequently an utter incongruity and inconsequentiality of thought and action well illustrated in their profound egotism, ethical deficiencies, absurd eccentricities, emotional instability with consequent erratic behavior and tantrums, poor judgment and periods of great excitement and productiveness alternating with periods of apathy and depression in which nothing is accomplished, etc., etc.

Grassett, in writing on the "semi-insane," has pitilessly laid bare the queer stuff of which so many of our great men have been made. Of some of these strange agglomerations it has been wittily said that while they may be cracked, still the crack has let the light in, a clever saying, indeed, but implying that they have suffered an *accident*, whereas it is generally the case that their brilliancy is *incident* to careers essentially imbecilic in much of their detail.

Thus far this brief and superficial survey of the realm of mental defection I trust has made it evident that while we may not always find startling physical stigmata, certain mental and moral deficiencies are characteristic of inferiority and deserve serious consideration, not only in dealing with individuals who commit crime or become unbalanced, but with those one meets in every community and in all walks of life. In every-day life we come in contact with individuals to whom we pay little or no attention until some fine day they do something strange, react to stress and strain in an extraordinary manner, when beneath the cracked veneer of the apparently normal there is suddenly revealed to our more painstaking examination a structure so frail that we wonder it has been able to bear the load as long as it has. These individuals have been born inferior and up to a certain point have been able to get along fairly well by virtue of favoring circumstances, or in the absence of markedly deleterious influences. When, however, the sudden strain comes, or the long continued wear, they are unable to endure and break into an acute

psychosis, or sag into a line of conduct so foreign to that of their previous selves as virtually to constitute a psychosis.

The following case illustrates rather well the imbecilic type that is yet so far removed from what we ordinarily think of as imbecility as to better cause it to be termed *inferiority*.

The patient, B. F., is a single young woman, aged 26 years, with an insane aunt, otherwise no family taint. Suffered scarlet fever at five with no apparent effects, attended school from 6 to 18, went through high school and was said to be very bright, but peculiar and irritable. After graduating from school she taught for three years, but told such lies about her girl friends as to cause them to avoid her, struck her mother on several occasions because she would not buy clothing that the patient wanted, ran her father into debt for finery and stole and misappropriated money for this same reason. She enjoyed music but made no determined effort to study it, did not go with young men to any marked extent, was inclined to be idle and finally stopped teaching saying that she was too good for such work and wished to travel. Later when offered a position at a good salary she made all the arrangements and drove out to the school but passed by it and came home again, saying that she did not wish to teach and was rusty in her work, after which she continued to buy much stuff she did not use and had at one time thirteen dress patterns not made up, and the same number of skirts which she did not wear.

In February, 1910, the patient left home in the night and was found in the morning in the snow, explaining that she wanted to show people how badly she was mistreated by her family. She became gradually worse and at times would lie about on the floor, or go to bed without undressing, cried much and again would laugh easily, did not go out of doors except in street cars, told many strange stories, was entirely idle, spent considerable time in her darkened room, gave away a fine fur coat and a watch, threatened to break up the home, and even suggested that she was not really her father's own daughter.

In April, 1911, she was brought to the hospital where a physical examination showed no hysterical stigmata save constricted fields of vision. She was at first tearful, complaining and non-cooperative, but a little later became quite complacent, rapidly adjusting herself to ward routine. She betrayed no delusions and no hallucinations. Examination of the intellectual field revealed no deficiency save that her school knowledge as a whole seemed superficial. Rapidly she became apparently quite normal, wrote many letters, spoke of herself as having been hysterical and as having regained her "will power," continued to lay stress upon her good family, desired a private attendant, wished to travel when she left the hospital, etc. Slowly she gained in weight, becoming an excellent helper on the ward, seemed to desire to go home and laughed at the thought of not being her father's daughter.

It would seem that the patient might go home at the present time, but her father hesitates in view of his former bitter experience with her. She presents certain hysterical-like characteristics, but practically none of the major diagnostic phenomena, mental or physical, of that disorder. On the other hand, note the imbecilic traits so prominent in her general degradation before admission to the institution, to-wit: extreme selfishness, vanity, superficiality of thought and emotion, fabrication, idleness, irritability and emotional instability. The interesting feature of the case is the utter breaking down of the entire personality, illustrating the inability of a constitutionally defective individual to play the game of life according to the ordinary rules of the game. There is not so much an actual psychosis here as a sinking of the whole personality deeper and

deeper into the quicksands of oddity from which the support of hospital discipline seems to draw her quite easily back to the level of her normal.

Again, note the case of M. S., a married woman, aged 35 years, whose mother died of "brain fever" after twenty-five years of invalidism, and whose father died of paresis. The first five children of this union died shortly after birth; the patient is the sixth, having one younger sister. She is said always to have been emotional and a lover of beauty but difficult to control and lacking in application, full of fun and fond of showing off, selfish in her general lack of consideration for others, but sporadically and unwisely generous. She was courted four years and finally married almost against her will, adapted herself poorly to the marital relationship, did not seem to desire children and when they came cared for them in a haphazard fashion though seeming to love them, and was much given to "nervousness."

Gradually she grew careless of her personal appearance, did not bathe properly, became subject to attacks of anger and even violence toward her husband and sister, following these spells with excessive repentance; showed some press of activity in writing long letters, visiting much, playing the piano loudly, and sleeping poorly. This alteration or degeneration of personality has come on gradually in the last six years, becoming worse the last year or two. A rest cure in a private sanitarium availed little and she was finally brought to the State Hospital in April, 1911, where she has shown herself bright and quite capable, a fluent talker, a water-colorist of no mean ability, always quietly indignant over detention here, and eager to talk volubly to any listener but always telling the same story in pretty much the same words.

In this case manic depressive insanity is to be considered, but a hypomanic state of six years' duration is rather difficult to conceive, and the entire picture seems better described by the term instability or high-grade imbecility with a manic temperament. The patient has been incapable of adjustment to the load of responsible wife- and motherhood. Childhood traits persist and in comparison with what we expect in a woman of 35, stand out so glaringly as to imitate a veritable psychosis. Imbecilic characteristics are fairly evident, namely: egotism, the love of display, emotional instability, superficial brightness of intellect and a lack of application, together with a resultant inability to make normal adjustments.

One more illustration of the subnormal type of individual with whom it is often a toss-up as to whether he goes to the penitentiary or to a hospital for the insane.

Family history negative, patient 30 years old, a farmer, married, with several children. As a child he was wilful and selfish, became easily angry and was rather cruel toward animals, went through two years of high-school and was said to be bright, especially in mathematics. Until 19 he worked on a farm with his father, then when his father died, worked there for his mother. Married at the age of 23, and continued on the farm, but is said never to have been a good farmer; husked his corn before it was ripe, bought an automobile for \$1,000, leaving his sister to take care of the interest for what he owed on the farm, was careless with guns and a reckless automobile driver. During the year previous to his admission to the hospital he became more difficult to deal with, swore much, talked loudly, purchased more farm implements than was necessary, etc.

Occasion for sending him to the hospital rose out of his threatened arrest for stealing automobile tires. To pay for these he gave a check for more money than he had in the bank and became much alarmed over the punishment with

which he was threatened. He was arrested and indicted before the grand jury, but the neighbors became convinced that he was not wholly responsible and at the trial induced the judge by their evidence of patient's former behavior to send him to the State Hospital as a mittimus case.

Physical examination upon admission was practically negative, no stigmata pointing to idiocy. He was rather boisterous, talkative, and somewhat difficult to get along with, cried freely at times, and again was quite sullen. He did not appear to regret his connection with the theft of the tires and once even said he regretted not stealing more of them. The incident of the theft appeared even to raise him in his own self esteem. For a time he continued to be irritable and dissatisfied, surly and solitary, gradually, however, becoming more tractable and sociable until a few months later he was given ground parole and put to work upon the farm where he worked well and from which he was finally paroled; seemingly in his normal mental condition. A letter received a short time ago stated that he was working hard in an automobile factory.

This man, you will note, is said to be good in mathematics, and to have had "a craze" at different times for guns, bicycles and automobiles. He was apparently something of a mechanic, and if this aptitude were increased a few fold we would have the picture of a talented imbecile, a man with a special aptitude in one direction, but lacking balance in all others. Selfish, improvident, easily led astray and unable to bear the burden of responsible manhood, he is lacking in dependability and in a crisis fails to react normally, suffering an exaggeration of characteristics which have been normal to him from childhood up. Without the intervention of friends he might easily have been sent to the penitentiary, although he actually presented the picture of an inferior individual sagging under stress and strain inadequate to produce any such result in a normal individual. The psychosis is indescribable and can well be termed an episode in the life of one who is constitutionally subnormal.

Similar to the above, I have no doubt but that in this one state thousands of histories of young offenders, male and female, might be written. Unfortunately for him perhaps, the high-grade subnormal individual does not always break or sag into an apparent psychosis similar to that of the last history noted. Too often it is merely into crime, or what is accounted as such in the absence of proof satisfactory enough to relieve him of responsibility. Among the young the Juvenile Courts are attempting to deal with the problem from a psychologic standpoint, and in Chicago the Juvenile Psychopathic Institute is attempting to classify young delinquents according to ingenious tests which well deserve the attention of the general practitioner as well as the specialist.

Everywhere there is an increasing tendency on the part of our County Courts to consider these unfortunates, young or old, as deserving treatment rather than punishment, and it behooves the physician to take the front in this movement. Very probably some responsible criminals may, as a result, find easy berths, but this is better practice than to send hundreds of inferiors to jail or prison because of acts for which they are at the best but partially responsible.

Inside the state hospitals it is comparatively easy to pick out those patients whose "insanity" is not so much a distinct entity as it is a logical continuation, albeit exaggerated, of their illogical thought and

conduct before admission; but the proper place where first to recognize and to deal with these individuals—a small proportion of whom reach the hospitals at all—is upon the outside. *And first of all they must be recognized.*

THE SEGREGATION AND TREATMENT OF THE FEEBLE-MINDED *

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In every department of medical science we are confronted with serious intricate pathologic problems, both of a special and general character. These can only be solved by an intelligent understanding of their peculiar nature, underlying cause and mode of development, together with the application of wise appropriate means and measures for their relief and prevention.

The study of the pathogenesis and propagation of many such, as well as the recommendation of suitable methods for their amelioration, appeals by their medical character more especially to the votaries of medical science for their just, humane and adequate disposition. Among such problems propounded to the medical profession is that which deals with the appropriate care, management and treatment of the feeble-minded. While strictly technically speaking the feeble-minded belong to the class of degenerates who enter life with a mental disorder or handicap which is not merely potential but actual, yet all arrests of development are not diseases but infirmities and are therefore subject to modification and educational treatment. It is therefore of primary importance that we define what is implied in the term feeble-mindedness, for it is so often confounded with other terms such as idiocy, imbecility, dementia præcox and similar states which are grossly misleading. According to the French psychiatrist, De Fursac, two kinds of arrests are distinguished: (1) a general arrest involving all the psychic functions, which include three degrees recognized as idiocy, imbecility and feeble-mindedness; (2) an arrest of development which is almost wholly limited to the moral sphere constituting moral imbecility or moral insanity.

Dr. Maurice Craig, the noted English psychiatrist, states in his recent work on psychologic medicine that "idiocy and imbecility are almost synonymous terms, for they differ only in denoting the degree of mental enfeeblement, while the feeble-minded belong to a class by themselves, as the intellectual development of these are on a higher level and capable of acquiring knowledge sufficient to be self-supporting."

Dr. William White of the Government Insane Hospital, Washington, D. C., sets forth in his "Outlines of Psychiatry" the following definitions: "Idiocy is a condition of profound mental defectiveness, the lower grades being unteachable, while the higher grades may be trained slightly in self help, viz., to attend the calls of Nature and feed and dress themselves.

* Read in a Symposium on Mental Diseases at Hotel La Salle, Chicago, April 18, 1912.

Imbecility is a condition of mental deficiency which can be materially improved by training but not sufficient for the subject to take a place in the world. Another form known as moral imbecility is a condition of mental defectiveness which is shown in the absence of the higher functions, particularly the moral, capable of training to a considerable degree, but always a menace to society. Feeble-mindedness, however, is a condition of slight mental defectiveness capable of much improvement by educational methods. The afflicted individual may ultimately take a place in the world and be self-supporting under favorable circumstances."

A recent article by Dr. Charles B. Davenport in the *Popular Science Monthly* defines feeble-minded persons as "those who lack one or more mental traits that are socially important, and that these exist in all degrees, and that, while they may occur isolated, yet it is the multidefective mental traits which constitute the main problem of the feeble-minded or those who are socially inadequate." Commenting on this article of Davenport *The Journal A. M. A.* in a recent editorial declares that among the well-known defects possessed by many individuals are word blindness, figure blindness, color blindness, number defectiveness, memory defectiveness, moral defectiveness, and that these defects are in general hereditary and the result of corresponding defects in the germ-plasm of the parents. If both parents be mental defectives, the combination of the germ cells will almost certainly result in a feeble-minded child. Defects in Davenport's belief are not a pathologic condition, but are merely deviations from the normal conditions of the adult; and from this point of view feeble-mindedness is simply an uninterrupted transmission from our animal ancestors. It is not reversion, but it is direct inheritance with failure to develop beyond it. Feeble-mindedness, according to this author, therefore consists in an aggregation of the defective mental traits, or failure of development of certain socially important qualities which render the individual socially inadequate.

Thus it would appear that a consensus of medical opinion by those competent to judge favors the view that there is an ascending scale of mental growth and retardation beginning at idiocy, which represents the lowest type and who are devoid of all attributes which go to form mind, thence imbecility where we reach the rudimentary intellect, although at times wholly devoid of moral sense; while a still higher step brings us to the so-called feeble-minded in whose mental organization there are also defects covering at times wide areas, but whose mental capacity to acquire knowledge and to benefit by education is larger than that possessed by either the idiot or the imbecile.

Moreover, the term dementia præcox is so often misapplied that we find it to mean by many any morbid mental weakness or enfeeblement which occurs during childhood or the period of adolescence. Its scientific application, however, should be reserved only for those whose mental disorder actually demonstrates progressive dementia. This confusion of terms and their lack of scientific interpretation is undoubtedly responsible for much disorder in classification of the different pathologic

conditions found in our eleemosynary and penal institutions and more especially is this true when applied to our state homes for the feeble-minded.

As an illustration, much as I regret to parade our own shortcomings as it now stands, the only state provision made for the mentally defective child in Missouri is the Home for the Feeble-Minded at Marshall, Mo. Into this is necessarily dumped the epileptic, the idiot, all grades of imbecility and dementia præcox, besides juvenile incurable insane conditions. Such a mixed environment as this, however classed or modified, cannot fail to prove not only a great hardship, but absolutely harmful to many children who are justly entitled to better state provision.

Moreover, it practically bars from entrance all those who are found suffering from lesser degrees of mental defects, for it would scarcely be just to place certain of the higher grades of feeble-minded children in such environment, yet at the present time it is the only refuge we have for such poor unfortunates. It is conservatively estimated that there are at the present time no less than 7,000 feeble-minded persons in the state of Missouri and only 400 of these are now under state custodial care. In addition to their other mental defects of the 400 inmates at Marshall, no less than 114 of them suffer from epilepsy, while the rest present the more serious degrees of idiocy, imbecility and similar mental states. Notwithstanding the fact that there is a large number of feeble-minded children waiting for admission the institution cannot receive them for lack of room. Nor is this unfortunate condition any reflection on the medical staff or its officers, for they undoubtedly feel keenly this great omission of the state and do the best they can with what they have, all being handicapped more or less by politics, yet they would willingly change their present deplorable dumping method if possible as they must realize that it is contrary to all modern medical scientific teaching and treatment.

Those, however, who are inclined to condemn such practice in Missouri and censure its methods would do well before doing so to find out something about their own state and its provision for the feeble-minded, for it will be found that in but very few states of the Union are conditions any better and in some they are even worse. What is urgently needed therefore is not only better provision for the feeble-minded, but a more practical scientific classification and treatment of its various mental defects, including wise and judicious means of segregation.

Every physician of experience is familiar with the so-called feeble-minded boy or girl brought to his office for advice and treatment. In its crude form it presents itself in two extremes, the idiot or dullard, and the mentally precocious child or prodigy. Between these two widely divergent conditions are children of both sexes, all ages and classes of society, presenting all the varying degrees of feeble-mindedness. Some of them are found manifesting their neuropsychopathic weakness from birth, while others postpone its active manifestation until puberty, adolescence or the educational period when they begin to lose interest in their studies, their home, parents, friends, besides becoming careless and indif-

ferent toward themselves concerning their appearance, clothing and habits. Moreover, many become morose, sullen, stubborn and indulge in various kinds of dissipation. Others may present an opposite clinical picture in becoming hilarious, talkative, act foolish, talk loudly without adequate cause, turn against their parents and become incorrigible or wayward with a marked tendency to become vicious and even to commit crime. Hence the former lad of fine promise now becomes a dismal failure, while the precocious girl, once the idol of her parents for her quick intellectual resource, now appears a prattling child and a bitter disappointment.

Such persons are often found in our public schools contaminating the rest of the school children by their lack of attention, psychic insufficiency, moral indifference and uncontrollable impulses, but because of their parents' pride, indifference, financial and social standing or political pull, their feeble-minded child is allowed to stay in school and mix with the other pupils to the detriment of all parties concerned. Many such are referred to the family physician for relief, but what to do for them at once propounds the most difficult medical, legal, sociologic problem of this age, because of the serious lack of state or civic provision, as well as the legal complications involved in enforcing their appropriate custody and control. Many parents refuse absolutely to cooperate with the authorities, hence a large number of such defective children are forced back on society and allowed to go more or less unrestrained, as well as unprotected.

All medical authorities, however, agree that because of their congenital or inherited defects, the feeble-minded child easily becomes addicted to all kinds of vice, crime and the worse forms of degradation. Moreover, independent of their purely feeble-minded state, many are found suffering from serious anatomic stigmata of degeneration, and somatic and psychic complications like epilepsy, syphilis, paralysis, moral impulsions, besetments, sexual perversions and all degrees of malnutrition due to the defects of development and a lowered resistance of the organism. These inherent defects and deformities also favor the development of misdemeanors and moral practices, which lead the feeble-minded quite often to be referred to the policeman, lawyer and the courts for treatment, rather than the doctor. And even where there is no criminal involvement the necessity for their absolute control in special schools or homes is so apparent that in spite of the legal complications they are often robbed of the medical care their condition so justly demands. What therefore is primarily a medical question often becomes of necessity a purely legal one; consequently the care and treatment of the feeble-minded is more often made penal in character than medically pedagogic, for the jail and the reformatory are necessarily substituted for the feeble-minded school, home or hospital. This also explains the origin and purpose of the juvenile court, for the large majority of the youthful offenders are found to be victims of parental neglect, inherited defects and conditions and circumstances which breed, develop and propagate the morbid condition which constitutes feeble-mindedness.

To substantiate this claim, your attention is directed to a recent report issued by Wentworth E. Griffin, chief of police of my own city, Kansas

City, Mo., in which he claims that last year within six months' time no less than 2,480 juveniles were arrested charged with crimes ranging from vagrancy to murder and that the majority of these boys and girls were not normal children but degenerates which required medical rather than penal treatment. "Boys and girls," says he, "should not receive correction in the city jails, the workhouse or reformatories. These should be the last resort. To correct a boy you must have an idea of his mental processes. It is natural that the parents understand something of the child and use that knowledge to make a good boy out of him. Certainly it cannot be done in the reformatories, for although the authorities there are competent, they are hardly medical psychologists. In my opinion if any progress is to be made it is the parent and the doctor that must do the work, not the police and the various courts."

That our chief of police deserves credit not only for publishing this report, but also for the advanced position he takes in recognizing the appropriate care and treatment of the juvenile offender is certain, for he understands the fact that the parents are often the chief offenders in their child's delinquency and that medical rather than penal treatment is more often indicated than is at present allowed or practiced.

When we come to inquire into the causes of feeble-mindedness, alcoholic heredity, syphilitic heredity and consanguineous marriages are found to be the chief etiologic factors. Bourneville claims that 48 per cent. of the idiots and imbeciles are the offspring of alcoholic parents, while syphilitic heredity may act in two ways: either in giving rise to a congenital anomaly through intra-uterine disorders, or by causing the appearance of meningeal and cerebral lesions during the first months of life, of which the arrest of development is the consequence. So far as consanguinity is concerned all authorities agree that the marriage of first cousins is attended with a great degree of risk to the offspring, more especially if in both families the stock is markedly degenerate. Acute and chronic diseases in the parents, fright, shock, injuries, parental neglect, faulty education, poverty, malnutrition, social dissipation and lack of proper control are all well-known factors in the production of feeble-mindedness.

In the diagnosis and treatment of arrests of development the physician is therefore called on not only to differentiate them from states of acquired mental deterioration, but also that of detecting high degrees of feeble-mindedness approaching the normal, beside determining in a given case the degree of mental defect present and its appropriate treatment. For such purposes a system of tests constituting a measuring scale of intelligence has been recently devised by Binet and Simon. These tests have been applied to normal children of various ages and have thus been standardized so that it is now possible by means of them to estimate the degrees of mental development of any subject in terms of the age at which such development corresponds to the normal average. The authors of these tests have taken special pains to eliminate the disturbing influences of education, having made it their aim to devise a measure of natural mental capacity and not of degree of training. It is said that in practice one finds a good deal of irregularity in the results of the tests as children

frequently respond to some tests of a higher age and fail to do so to some tests of a lower age. This led to the adoption by Binet of the following rules: (1) The mental development of a subject is rated at the highest age in the tests of which he has succeeded with not more than one exception. (2) For every five tests passed above the age level as determined by the first rule one year is added. Hence in interpreting the results of these tests one must constantly bear in mind the great difference which exists between normal subjects in rate and degree of mental development. A variation of one or even two years from the age level of intelligence as estimated by these standards is by no means to be regarded as necessarily pathologic, but departure of three years or more below these standards is of course of great significance from the pathologic standpoint.

It is also claimed by these authorities that the average child of 3 years will repeat a sentence of six syllables but not of ten. At 6 years all normal children can repeat a sentence of sixteen syllables, while at 12 years a normal child should be able to repeat a sentence of twenty-six syllables. The test is passed only when the sentences are repeated without a single error.

In the United States, where the problem of preventing the immigration of mental defectives is one of great and growing importance, this measuring scale of intelligence should be of great practical service. Moreover, as a guide in the medico-pedagogic treatment of the feeble-minded as well as in determining the degree of responsibility in criminal cases, it should be of great value.

In the treatment of the feeble-minded all physical defects, reflex irritations and peripheral as well as functional disturbances should be recognized and receive appropriate treatment. These include a large class of local conditions such as eye, ear, nose, throat and dental defects, as well as complications such as tuberculosis, rickets, syphilis and general malnutrition, all of which require both medical and surgical attention. Moreover, in addition, the feeble-minded should be segregated and placed in special classes or agricultural colonies and graded as to fitness of capacity to acquire knowledge and furnished suitable employment.

Such segregation of the feeble-minded is advocated by medical authority the world over, and when this is done they can be made under appropriate medico-pedagogic treatment to become largely self-supporting citizens. As an economical as well as a humane measure the various states of the Union can well afford to make such provision more especially for the large body of feeble-minded who are now without any medical care whatever. Moreover, where it is possible, laws prohibiting the marriage of such as well as all other defectives should be passed and enforced.

This preventive measure has already been done in a few states of the Union with good results, but where this is not possible measures for the prevention of conception by such defectives have been devised and advocated as a means of preventing additions to their ranks. For this purpose sterilization by vasectomy or salpingectomy as well as castration is recommended. In the state of Indiana, for instance, laws have been enacted providing for the sterilization of defectives and criminals, and a report

of 456 cases of vasectomy performed in compliance with the law at the Indiana Reformatory has been published.

In other states, particularly Illinois, the same measure is advocated, and while we perhaps in Missouri are not quite as progressive, yet we believe that the time is not far distant when our statesmen and legislators will realize the necessity of doing something more than is now being done toward furnishing appropriate care, management and treatment of its feeble-minded as well as devise more adequate means and measures for the prevention of its delinquent, dependent and defective classes.

THE FEEBLE-MINDED AND EPILEPTIC *

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While the subject assigned me — "The Feeble-Minded and Epileptic" — has rather a large scope, I shall endeavor to cover some points in a more particular manner than others.

In the first place, I wish to call attention to the increasing number of these unfortunate classes of humanity. It is estimated that in the state of Pennsylvania there are to-day 18,000 feeble-minded and epileptic individuals aside from those receiving institutional care, and this number is increasing at the rate of from 500 to 600 per annum.

In the so-called ungraded classes of the New York City schools, they are caring for some 2,000 feeble-minded children, and this number is increasing rapidly. I have no doubt that other states show the same proportionate increase in the number of these individuals, as well as practically the same proportion who are not being cared for.

It was estimated some ten years ago that the feeble-minded and epileptic comprised 0.5 per cent. of the total population. To-day conservative estimators say that they have increased to from 3 to 4 per cent.

A number of investigators have advanced the theory that this increase was due to the great influx of immigrants. Other investigators have stated that a larger percentage of feeble-minded persons existed in the rural communities. I do not believe that either one of these theories is correct. I can find no statistics which show that immigration has increased 800 per cent. in the last decade. But the feeble-minded and epileptic have. Consequently immigration cannot be assigned wholly as the cause for this increase.

From personal experience and from studying the number of school children in our rural districts, both in my own state and others. I do not find that there is near the percentage of the feeble-minded and epileptic in the farming communities that there is in the cities.

There are a number of fine-spun theories advanced concerning this increase, but I do not care to burden you with them, as they really are

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of very little importance. The main question is to recognize the seriousness of the situation; that this increase is a fact, and that it is constantly progressing.

The recognition of this fact confronts us with the question: "What is the remedy?" It is a well-recognized fact that there is no other condition more clearly traceable to heredity than these two conditions—feeble-mindedness and epilepsy. All investigators state that the offspring of a feeble-minded father and feeble-minded mother must necessarily, in all cases, be feeble-minded. I would go still further than this and state that the offspring of any feeble-minded person, whether he or she be mated with a normal individual or not, is mentally below par. While in a number of cases they may be able to pass muster and escape being classified as feeble-minded, they, nevertheless, on close scientific examination, show various marks of mental non-development. This being the case, what is to be done in order to protect the future generations of mankind, as well as to better the conditions as they exist to-day?

Restriction of marriage, and the compelling of each person who applies for a marriage license to show an absolutely clean bill of health, not only as regards physical conditions, syphilis and venereal disorders, but an absence of any inherited mental taint, feeble-mindedness, epilepsy, insanity, criminality, etc.

The objectors to this method of procedure claim that it is not the proper thing to do; that it is restricting the liberty of the person; that it is unconstitutional.

A number of the governments of the world, as well as individual states of our United States, have passed stringent laws, and are carrying them into effect, regarding the propagation of animal and plant life. The individual who wishes to propagate nursery stock must receive from his state board of Agriculture a certificate stating that his nursery is free from disease, and that his plants will be raised under proper conditions. Stallions are registered and the owners are compelled to show that they are entitled to be used for the propagation of their species.

If it is important to take such steps for the conservation of plants and animal life, is it not much more important that we take such steps as are necessary to conserve the individuals of the human race? If proper marriage laws are enacted and enforced, there is no doubt in my mind that we have reached, at least in part, the solution of this problem as far as posterity is concerned.

What shall we do with the feeble-minded and epileptic subjects already existing? One school says vasectomy, another castration and still another segregation; none of which is correct in whole but in part. To reach the proper solution of this portion of the question, a part of all three of these ideas must be carried into effect.

SEGREGATION

How are these persons being segregated at the present time?

The institutions throughout the country are doing a great work in this respect, but they cannot segregate the individual until he is first

brought to them, and then only for the period of time during which a more or less misguided parent is willing to leave the patient in the care of the institution. Castration and vasectomy should be used for this class of cases only as an adjunct to segregation.

If it is important to report every case of small-pox, diphtheria, chicken-pox, measles, scarlet fever, typhoid fever, tuberculosis, and a host of other physical diseases, it is, to my mind, just as important to compel physicians, parents, teachers and all citizens, in fact, to report every case of epilepsy and feeble-mindedness of which he or she has any definite knowledge.

The courts should be given authority to investigate these cases when reported to them, and every case should be sent to an institution for a period of observation and inspection, which period should be long enough for the medical observers to definitely report on the condition of the subject. Proved a case of epilepsy or feeble-mindedness, but two channels should be opened to the parents or persons responsible for the patient — either commitment to an institution for life or castration or oöphorectomy. On the other hand, if the latter course is selected, some guarantee should be given by the parents or persons responsible that they are in proper circumstances to give the subject the care and attention he should have.

When this argument was advanced before a meeting some time ago, the statement was made that while the idea was an excellent one, it was at least fifty years ahead of its time. However, I am loath to believe this, as matters sociologically have made marvelous strides in the last few years. If this idea is taken up and properly advanced, I have no doubt that it will be adopted long before some of us have any reason to suppose it will be.

While some such method is being threshed out, what can we do to relieve the situation?

First, those of us who are interested in the subject should enlist the cooperation of the medical examiner of the public schools, the social worker and physicians in general. This cooperation will aid in the early discovery of cases of feeble-mindedness and epilepsy; will suggest a method to remove parental objection to sending cases to an institution; and will place cases in an institution at an earlier and more trainable age than we are now receiving them. Public institutions to-day usually receive cases of feeble-mindedness and epilepsy after all chances for bettering their condition has passed. This should not be. The social worker and the charity organization worker should be instructed as to the proper manner in which to broach this subject to the parent. The parent should not be told that six months in an institution will make John a college professor, a lawyer, a linguist or even a physician, John at the time being an idio-imbecile, chetin or a mongol. This mistake is made time and time again. Parents bring us low-grade children, idio-imbeciles, imbeciles, etc., telling us that they have been informed that it will take not more than a year at most to make a normal person out of these specimens. It is our first duty to remove this misapprehension

on the part of the parent, and, unfortunately, to be honest with them, we must say, in a large percentage of cases, that nothing can be done along educational lines.

The consequence is, on the one hand, that they become dissatisfied and remove the case, which in all probability is a case that demands custodial care; or, on the other hand, the child does not make the progress that they have been led to believe he will make, and they remove him.

The parents should be told plainly and simply that it is an institutional case; that, if there is any hope whatever of an improvement in his or her mental condition, the training must begin at an early date; and that institutions are better able to provide the special care and training the patient needs; that it is not a stigma to be compelled to send such a case to an institution, but, on the other hand, it is a method of procedure in keeping with the best moral teaching of the day.

We find that instead of taking this method, a number of the people interested in the work begin to delve into the realms of psychology and its kindred subjects; that "a little knowledge is a dangerous thing," and they befog the whole situation. These individuals have their use. Their work is a great one, and far be it from me to belittle it. I wish merely to point out how they could better aid the subject in whom they are interested, and the institutions which must ultimately care for the patient, and society at large.

From the statements made to be by truthful and well-meaning parents I am led to believe that a number of these individuals approach all cases of feeble-mindedness and epilepsy from the same standpoint. That is, being unable to properly diagnosticate existing conditions in each case, they assume that all cases are alike. Of course, an argument based on false premises can but lead to false conclusions.

Sammy is a backward child. He has made but little progress in school. He has hypertrophied tonsils, adenoids, some eye defects, a chronic catarrhal condition, which affects to some extent his hearing; he is not properly nourished. His physical defects are removed; he is given plenty of good food and good healthy surroundings; he is supplied with glasses. He begins to take an active interest in his surroundings and soon regains his position in school.

On the other hand, William is an idio-imbecile, lacking in mentality; is slovenly in appearance and does not know how to dress or feed himself. He is, in fact, a low grade case.

The partially informed social worker, knowing the history of Sammy, immediately states to the parent: "Why, this case of William's is just like Sammy's." Remove his tonsils, clear out the adenoids, treat his ears, buy him a pair of glasses, give him milk to drink three times a day, take him to a psychologic clinic and, presto, he is a normal individual.

After cases come to us we, of course, have no specific, with the possible exception of the cases known as cretins, and it has not yet been my lot to see much mental improvement in these cases from the use of thyroid, though, of course, we do use it in these cases. Our cases of epilepsy are helpless, incurable cases and nothing need be said concerning

their treatment, as volume after volume has been written concerning their treatment with but little result.

As to the feeble-minded individual, we attempt to interest and to teach him as much as we possibly can, not with the idea of being able to turn out into the world a normal person. That cannot be done at this time with the classes we receive. We try to teach them to read and to write; to be useful members of our institution community; to be able to receive messages from home; and to correspond with their parents. The aim being to make as many of these patients, as are physically able, partially self-supporting, under the guidance of the institution.

In closing, I wish to make a plea for the better classification of the individual now known as the feeble-minded and epileptic. Unfortunately it has been the tendency of a number of the states during the last few years to class the feeble-minded and epileptic as an entity, and to place them in the same institution. It is true that the epileptic, the feeble-minded and the insane do not belong together; neither do the epileptic and the feeble-minded. They are as different as day is from night, and separate institutions should be constructed for each class. Not only this, but a subdivision should be made, in the class commonly called "feeble-minded," as it is surely not proper to place a trainable case where he comes in daily contact with idiots and idio-imbeciles. The method pursued in Great Britain is, to my mind, an ideal one. As far as possible, asylums are constructed for idiots; other institutions for the imbeciles; special training institutions for the medium and high-grade types of the feeble-minded; and separate schools for the so-called backward child.

In this respect, while the feeble-minded and epileptic do not belong together, neither do reform school cases belong in an institution for the feeble-minded. It seems to be the tendency to place the blame for any moral taint of feeble-mindedness. Thus we are receiving applications, day after day, for the admission of petty thieves, corner-loungers, prostitutes and all classes of moral lepers, as it seems to attach less stigma to a case to say that prostitution is due to feeble-mindedness than to state that the individual is a prostitute, and should be so treated. It is certainly not fair to the unfortunate feeble-minded person, who cannot help his condition, to be brought in contact with such individuals.

There may be some objection to the possible expense to be incurred in the carrying out of such a plan as outlined herein, but in this day and age, when each state has millions to spend for good jails, good court-houses, good capitols and good roads, it can afford to spend at least thousands for good citizens.

DISCUSSION ON PAPERS OF DRS. READ, PUNTON AND CARY

Dr. Theo. Diller, Pittsburgh, Pa.: These are very real things that we have brought to our attention this afternoon—very practical things that we have to deal with in a very pointed way. We have not the political power nor the financial resources to deal with them as we should, and it seems a pity that we must get together and convince ourselves, who are already so convinced, of what should be done and then have no means of carrying out the measures proposed.

Dr. A. M. Corwin: I feel that it is high time, taking Chicago as a basis, as shown by the partial attendance here of the 2,500 to 3,000 regulars, 1,000 homeopaths and the lesser numbers of eclectics and other branches of the profession, that doctors wake up to the importance of these questions that touch them all vitally.

We are on common ground, whether we be specialists or general practitioners or laity, and the sooner we invite all these classes of thinking people together, forgetting the slightly different trend of our thoughts in other directions and stand together, just so soon shall we educate ourselves and get better treatment for these conditions.

Dr. Cary said there are some 18,000 in Pennsylvania. I do not know what the proportion is in Illinois.

There is another proposition I will touch on. That is the fact that we are listening to profound explanations and hypotheses, studying names and theories and results, all of which are good, and we are getting into the practical side for the solution of these questions through such men as Dr. Cary. But we are, after all, looking after the product temporarily only, while the hoppers producing the dependants and defectives still go on producing them in increasing numbers, and physicians as a whole take no steps to put themselves on record against the saloon in public life, which is chiefly responsible for their multiplicity. If we go through the records of our institutions we will find that not only syphilis, but alcoholism, is responsible, largely, for these results. It is time to strike directly at these causes and there will be less of these effects to handle.

Dr. C. J. Lewis: We have been treated this afternoon to a series of thoughts that appertain to the well-being of the race. I believe it is well recognized that wherever there is progress and evolution there is also a large degree of retrogression and degeneracy. There will be, in all races, as indicated by the papers read here, a large percentage of the births that have not had sufficient material to build their bodies that will not be up to the general average. It is to this class that we have been introduced this afternoon. Dr. Punton quotes Bonville as giving the percentage of all people in state institutions there because of alcoholism as 49.

Now, I am not a prohibitionist, but I believe that we, as a race, have retrograding habits. We have the habit of drinking, of overeating, of drug taking, and we follow many habits that lower our standard, and by that standard we shall have to appear in the coming generations in spite of what we may do.

What is going to be done? It is exceedingly difficult to determine. We have societies and organizations of this and that sort and institutions, but they are along special lines. We cannot come together and understand that we are all making for the one common goal of benefit to the race. This is impossible in our present trend, and I think if we could only bring about this result so that we might tell our people how to have children born that would be properly bolstered during intra-uterine life, we should have no more feeble-mindedness from the standpoint of heredity to deal with.

Dr. Julius Grinker: As a resident neurologist I believe that I voice the sentiments of those present in saying that meetings like these will benefit our local profession. We have previously noted that when neurologic subjects were up for discussion the general practitioner was conspicuous by his absence. Such papers are usually placed last on the program, and before the reading is half over the room is almost empty. The same truths sound far better when uttered by guests, such as have done us the honor to come, than when given by men whom you elbow at the street corner.

The speakers told us some good things, and I am glad to have heard them. They have shown the class of work which is being done by the men in the state institutions, and I believe much good will result from such meetings.

I share Dr. Tomlinson's belief relative to the movement started in the Pennsylvania town with reference to reporting cases of epilepsy and feeble-mindedness. There is great difficulty in getting busy doctors to report scarlet fever and diphtheria—to get reports on feeble-mindedness and epilepsy would be next to impossible. Should we get such reports most of them would be practically worthless,

for the simple reason that the average doctor cannot diagnose cases of feeble-mindedness, not having learned it while a student.

Contrary to Dr. Tomlinson's remarks about the nomenclature of constitutional inferiority, I believe the term should stand. We meet many a case in neurologic practice which cannot be classed as insane or imbecile, and yet they are decidedly inferior. Legally, they cannot be sent to insane asylums. If such patients happen to belong to the wealthy classes they may escape notice altogether.

I recall the case of a young man who brought his family to the brink of ruin. He was accomplished in music and had a splendid physique. When a mere child he distinguished himself for his lying propensities, which amused his parents. When he became a man this weakness became still more apparent, and in addition he began to forge checks which his father always "made good." Of course, the parents reached the point of bankruptcy before they had fully realized that they had to deal with a case of constitutional inferiority. He is now an inmate of a sanitarium for the insane. Had this condition been recognized early, an attempt might have been made to overcome this inborn tendency, but in this case nothing was done until it was too late.

If such a patient happens to be the child of poor people, we usually find him in the penitentiary or, in case of a woman, in a house of ill fame. These are constitutional inferiors, and as physicians it is our duty to learn to recognize the differences between them and ordinary criminals. To them not punishment but treatment should be given. The subject is a very large one, and I think Dr. Read has dealt with it adequately.

Dr. Frank P. Norbury, Springfield, Ill.: One of Dr. Read's cases came under the head of having had all the advantages of wealth. I knew her in her girlhood. Her father was one of the wealthiest men of central Illinois. She had all the advantages of education abroad and all that goes with a social position and wealth. But the case was unrecognized as a mental case, and as I came into consultation on the case it was not with the idea that there was any special nervous disorder, or with any special wish on the part of the family, but on the invitation of the family physician, who felt that something should be done.

I think these cases are, as Dr. Tomlinson says, cases which require special care and consideration on the part of general practitioners. There is no type of a case that causes more worry or anxiety or more broken-up homes, even financial distress on the part of the husband, than this type.

I know in my own experience I have come in contact with many such cases. It is an interesting feature to note that most of these women have good husbands; men who will deprive themselves and their families in their anxiety to provide for the unfortunate wife and mother. I think we should give special attention to these cases during the adolescent period, when, if recognized, time and efforts may be saved, which if allowed to be ignored bring distress and misfortune in their train.

I am especially convinced of the truth of the statement that a stormy puberty means a stormy menopause. We have time and again noticed mal-developments, mal-adjustments during adolescence, which impress us this way from the social standpoint, and more especially from the standpoint of the patient becoming a wife and a mother. We should have some means of knowing whether young men or young women are capable of entering the marriage relation. This means a working knowledge of social psychology—eugenics and preventive medicine. The Eugenic Section of the American Breeders' Association offers especially good opportunities for research along this line. It was stated long ago that the ultimate end and aim of life is happiness. This is what we seek for all men and women, some of whom unfortunately will even go to the extent of taking their own lives to bring about happiness.

Dr. N. Schoolman: I can readily express myself as belonging to that class of physicians who may style themselves laymen when it comes to such questions as these under discussion. I shall, therefore, make my remarks free from the standpoint of the layman.

While it is not well, as a rule, to deal in "glittering generalities," still general terms lead to a general conception of a subject, and it is especially well to have general practitioners who do not go into a detailed study of these cases to have a general idea of them.

I was very glad to hear the reader of the second paper, Dr. Punton, lay stress on the necessity for more thorough segregation.

But I was especially interested in Dr. Cary's paper, dealing more specifically with the old-time treatment of the case *per se*, and calling attention to preventive treatment of the constitutionally inferior by stopping them at their source by all the means of safeguarding the marriage, etc.

It is a sign of the times that we are looking at these with a preventive eye, not taking the case after it is progressed and saying it is incurable. Economic conditions have a great deal to do with this question. Social and industrial justice must be looked on as measures of preventive treatment. Constitutional inferiority is a relative term. It gains its significance, when considered like all other diseases, from the standpoint of the virulence of the attack and the force of resistance. These are the factors of the equation. The resistance resides in the individual and social forces that help the individual. One who is constitutionally inferior to withstand the stress of pathologic social conditions may prove constitutionally fit to abide under a happier order. It is a pity that so often environment makes for inferiority. Instead of it being the easy and the natural thing to do right, to be honest and upright, it is the hard thing to do, and if perfectly normal individuals—those with all the strength of their capacities—find it a hard thing to do right, how much harder must it be for those who are constitutionally inferior.

Dr. Blanck: I should like to say something of the commercial side of this question. A great deal can be done when we look at the money question. History shows that when nations become rich and luxury is common, the people begin to go down. When we look at the matter we find that it is very often luxury, too much luxury, or the cry for luxury, which brings people from the right track.

Nowadays the education of the young all points to luxury. Every paper, every magazine, everything that our children read, points to luxury. All the plays they see feature this idea, so that by the time they have graduated, instead of having been taught character, self-reliance and self-control, they have a craving for luxury. That is one side of the question.

If the general practitioners want to know the truth of this let them go to the juvenile court, follow these children to their homes, and there they will see very plainly that most of the inferiority is, primarily, an economic problem.

Even the institutional care of children has come to be placed on dollars and cents basis. If the institutions cannot make money they very soon go out of business. The children from the county institutions are "farmed out" at so much per month. Do they get medical attention? Indeed, they do not. That would cost money, and is not in conformity with the ideas of those in charge of these children.

Dr. H. C. Keough: In reference to the lack of interest shown by general practitioners, let us find out possibly one reason for it. General practitioners come in contact with the patient, they look him over, perhaps in consultation, and it is decided that this patient should be placed in an institution. He is taken to the institution and the general practitioner loses sight of him. His contact and therefore his vital interest in that patient is gone.

In any other line of medicine, no matter what measures are undertaken for the cure, or who is called in consultation, the man who originally had the case follows it to the end.

If a man could take his cases to some sanitarium and there, in consultation with the attending staff, continue the management of the case, he would not lose his interest in this class of cases; but that is not within the range of Chicago physicians.

There is no reason why the general practitioner should know anything about these cases. It is my pleasure to be associated with Dr. Kiernan, where I believe the advice I have been given from day to day and week to week has led to good results. It is all in one's ability to consult with an able man and see that his treatment is carried out.

Dr. Charles Read (closing the discussion on his part): I have only one word to say in closing. In response to Dr. Keough, I will say that I believe there are very few, if any, institutions that will not welcome the general practitioners when they have cases they wish to have cared for in the hospitals. I know we are always glad to have him meet us on cases that he brings and give us the benefit of his knowledge of the previous history of the patient.

I have enjoyed the other two papers exceedingly. They were more confined to the question of how to deal with the patients, while I tried to confine myself to the recognition of certain phases.

I do not think I laid so very much stress on terminology. It was not my intention to do so, although I did try to follow the French authors in differentiating between idiocy and imbecility. Most of these cases are probably of the imbecile type. The mere matter of names is little; it is a question of the personality of the individual. That is what I have tried to bring out. That is what we must become familiar with if we wish to recognize these conditions outside the institutions. I think there should be some distinction between the subnormal individual and the insane individual. They quite often verge onto the psychoses, but often it is more a sagging in the characteristics which have been peculiar to them outside the institution.

Dr. John Punton (closing the discussion on his part): I feel very much pleased and honored with the generous discussion given my paper. I believe we are all agreed that there is such a thing as constitutional inferiority; and I believe we are also agreed that there is not sufficient being done by the states for these unfortunates.

Many people to-day suffer from a neuropathic diathesis which we all admit is one of the prime factors underlying this condition. Some ten years ago I read a paper on this general subject in which I called attention to the fact that many of the children in our public schools were out of their environment and should not be there. After reading the paper the general profession present concluded that it was a fine-spun theory, which was, however, unfortunately not practical. In that paper, among other things, I advocated the legal governing of marriage. Two months ago I read another paper on the same topic to the same society, and called attention to the fact that by processes of education of the profession the "fine-spun theories" of my paper have come to be quite largely believed in. That medical inspection of schools was very generally an accomplished fact, and that in almost every state it was being recognized that something should be done legislatively to overcome constitutional inferiority.

I was interested in Dr. Keough's remarks about physicians maintaining charge of patients after their admission to hospitals. I have been associated with such institutions for thirty years, and I have seldom seen a physician show sufficient interest in a case which he had sent to the institution to come in and study its progress, although he had a perfect right to do so and even to take part in the treatment if he wished. The fact is that almost the opposite is true; general practitioners seem to feel their incompetency to handle such conditions, and do not come near them after they have been committed.

Dr. H. M. Cary (closing the discussion): I am very glad that the ideas advanced in my paper have caused some discussion. What we want is a war, not of words, but of work, work, work! There is not a person here, professional or laity, man or woman, general practitioner or specialist, who cannot convert one individual to the necessity for something done on this matter, if they will work. Something must be done. This constant fighting over this and that and between the general profession and the specialists is all wrong, when we consider what we have to attain. Something to stop the increase must be put into effect.

Expense? In New York 2,000 are being cared for in ungraded schools, and in the graded classes 6,000 children are shut out because there is not room for them in the schools since this provision has been made for the feeble-minded. In 1910 the insurance commission paid \$1,500,000 for fires caused by feeble-minded. A quarter of that spent in prevention and treatment would have accomplished wonders.

As to alcohol as a factor in the cause of epilepsy and feeble-mindedness (understand me, this does not establish anything, but simply gives you a little basis for comparison and thought): March last, out of 100 cases examined, sixty-five were found to be directly attributable to alcoholism.

CRIMINAL INSANITY*

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MENARD, ILL

The study of the criminal insane in Illinois is to a great measure limited to the Charities Service in general and to the Chester State Hospital in particular.

Since the Chester State Hospital by legal enactment admits only those of the above mentioned class it will be in order to review in a brief way the circumstances of these admissions.

Classifying them according to the manner of commitment they will readily lend themselves to the following divisions:

Class A. Those who are admitted on certificate from one of the penal institutions. This class constitutes about 60 per cent. of the total admissions.

Since this class stands convicted of crime before the question of insanity is raised, except in rare instances, one would naturally infer that the criminality antedates insanity unless a more careful study of each individual is made than the usual court proceedings offer.

This phase of the question will be discussed later.

Class B. Those committed to this institution directly by the courts, the command for which is conveyed to the superintendent in a writ called a mittimus. This class constitutes about 35 per cent. of the total of those admitted.

The court in its effort to determine the degree of criminal responsibility, naturally divides them into two classes: First, those against whom a charge of guilt is lodged for the reason that the circumstances surrounding the crime clearly indicate to the court that at the time of the commission of the crime the defendant was sane, but between that date and the arraignment in court the defendant became insane. Second, those acquitted of crime on the ground of irresponsibility because it appeared to the court that the defendant was clearly insane at the time the crime was committed.

Class C. Those inmates of other charitable institutions who become dangerous to either person or property and are transferred to this institution.

* Read in a Symposium on Mental Diseases at Hotel La Salle, Chicago, April 19, 1912.

A further study of the above classification leads to the inference that in about 75 per cent. of the admissions the crime antedates insanity, but conclusions reached from the study of the above named classes can not be regarded as final and complete in a comprehensive consideration of the question since we have to deal with only the less fortunate of the criminal class.

It has been said that the number of convictions amounts to only 5 per cent. of the total number of arrests, and the number of those who escape arrest are far in excess of those who, because of a poorer mental endowment, are caught in the elastic meshes of the legal net. The confines of the criminal class are still enlarged when we include those of a positive criminal tendency, who for lack of absolute want, or the proper environment have not committed an indictable crime. Again the limitations materially widen when we include a host of people who are not guilty of an indictable offense but are vicious by nature.

The application of the term crime is very elastic in use and has only a relative meaning, for certain acts are classed at times as criminal and at other times as vicious: e. g., as long as the actor is the recipient of the results of the act it is classed as vice and the state lays no penalties against its commission, no matter how destructive or flagrant the violation of the moral code.

If the act results in the taking of the life of a fellow man it is called murder, but should he by self-inflicted wounds terminate his own life it is condoned as an unfortunate circumstance. Or should he satisfy his lustful desires by a forcible seduction of a female, it is considered a heinous crime and is severely punished, but should he secure satisfaction by the practice of self abuse even to the wrecking of his nervous system and the dethroning of reason, he would be called vicious and his habits deplored.

The study of criminology in the past has been desultory and fragmentary and this condition will prevail until the student of this branch of sociology arrives at, and adopts some scientific classification. That criminals are susceptible of such a classification cannot be questioned since it has a basis in physical or mental fault and will lend itself to a classification with distinctions as clearly differentiated as insanity or other conditions due to the deviation of a person from the normal species. This fact has long since been stated conversely as follows: "*Mens sana in corpore sano.*" Since the intellectual and moral faculties have definite centers of localization, a basis is thereby offered for a definite classification of criminals.

In substantiation of this statement, Lydston quotes Benedict as saying: "To suppose that an atypically constructed brain can functionate normally is out of the question."

The same writer says: "With reference to the brain defects, there is so much clinical evidence of the aberration of morals and conduct from brain disease or injury that we are justified in believing that brain defect of some kind affecting the mental and moral faculties is the *fons et origo* of criminality." And again, "Beneath all phenomena

of social disease lies a variation of intellectual and moral faculties from the normal average standard."

Lombroso attempted a classification of criminals, which though crude in form and elementary in nature, will offer as reasonable a basis for the discussion of the subject as any proposed.

He says in his *Criminal Man* that "all law breakers cannot be classed in a single species, for their ranks include very diversified types who differ not only in their bent toward a peculiar form of crime but also in the degree of tenacity and intensity displayed by them in their perverse propensities so that, in reality, they form a graduated scale leading from the born criminal to the normal individual."

Again he says: "Born criminals form about one-third of the mass of offenders," and of this he theorizes as follows, while making a post-mortem examination on the brain of an Italian criminal named Vilella: "At the sight of the skull I seemed to see all at once, standing out clearly illumined as in a vast plain under a flaming sky, the problem of the nature of a criminal who reproduces in civilized times characteristics, not only of primitive savages, but of still lower types as far back as the carnivora." Lombroso was overwhelmed with this vision when he laid open the skull and observed the "vermis was so much enlarged in the case of Vilella that it almost formed a small intermediate cerebellum like that found in the lower types of apes and rodents and birds." Thus he explained the origin of the enormous jaws, strong canines, prominent zygoma, strong orbital arches, etc., as common with carnivorous animals, and the increased stretch of the arms as common with the ape. This reversion to a former species he terms atavism and concludes that "the criminal is an atavistic being, a relic of a vanished race."

Following out this line of investigation we are irresistably led to the conclusion that the foundation for the physical defects that lead to the "career of crime" in later life is laid when the master hand in the process of differentiating the embryonal cells of the fetus into various organs, fails to conform them to the usual type of the race.

At the time of fecundation, the ovum of the most degenerate savage does not differ materially, from a histologic standpoint, from the ovum of the highest type of civilized man. As the process of differentiation and development advances the savage, by virtue of inherent qualities, is only capable of rising in the process of growth to a level with the racial type of which he is a member.

The ovum of the most civilized type of humanity begins existence on an equal level with the savage, and as development progresses the differentiation between the two types is very slight, during the early periods of existence, but as time advances the paths of divergence separate more rapidly during childhood and adolescence than during the former periods of existence.

The degenerate class not only develops more slowly but they reach the high tide of development at an earlier period of life than the normal individual. This period of development usually lasts until

puberty. This course of reasoning leads to the conclusion that the criminal type among the civilized races are those unfortunate members who possess from the hour of fecundation some inherent property or power that inhibits or impedes the process of differentiation of the civilized type from that of the savage, and leaves them more nearly conforming to the savage than the civilized type. A deviate of this class will, during infancy, manifest outbursts of unnatural passions by scratching or biting the mother or other members of the family. At a later date he will manifest a disposition of cruelty to animals and weaker playmates; will wantonly destroy property and maliciously violate the rights of his companions and will in various other ways throughout the journey from childhood to maturity show the progressive development of the criminal nature.

That all students in criminology do not agree with Lombroso in his conclusions is clearly set forth in the following quotation from Judge C. A. DeCourcy in "Problems of Crime;" while discussing the erroneous views coming down to us from barbarous days and the general public, he states that the "unfavorable and skeptical attitude of the public is the widespread conviction that the criminal is a class by himself, different from all other classes, with an innate tendency to crime, marked by certain peculiarities of the body, and whose acts are beyond the control of the will. This 'criminal type' theory, the born criminal of Lombroso, is not based on reliable and scientific investigation."

Basing his further remarks on records of the investigation of three thousand of the worst convicts of France he states, "The result of that investigation, thoroughly scientific as it was, showed that both in regard to measurements and the presence of physical anomalies in criminals there is a startling conformity with similar statistics of the law-abiding class." It has been stated that the so-called stigmata of degeneracy do not essentially accompany a criminal tendency, for many persons of undeviating moral rectitude frequently possess many such stigmata, while criminals may possess so perfect a physique that careful study will reveal few, if any, stigmata of degeneracy. The explanation for this state of facts is based on the hypothesis that the perfect physique is inherited from one parent while the criminal tendency is inherited from the other. While we are compelled to admit this statement, yet it is of very infrequent occurrence and only indicates that the arrest of development described in the preceding remarks, may exist in either the physical, mental or moral spheres or any combination of these.

In the preceding discussion I have intentionally avoided any attempt at a lengthy enumeration of the various stigmata of degeneracy, for I assume that these are in a great measure familiar to all. Your attention will hereafter be called to the second class, called by Lombroso "criminaloids," or those in whom criminality is not manifested without some adequate cause or some disturbance of the mental or moral equilibrium. Numerically this class, Lombroso states, constitutes about two-thirds of the criminal class. This class usually has rather an

obtuse inhibitory power but as long as they are surrounded by healthy environments, and continue in habits of industry, they do not yield to criminal tendencies until some special temptation or mental disturbance arises.

The class of criminals discussed in the foregoing has to do principally with results of prenatal causes but the class now under consideration show the results of postnatal changes.

I wish to state a proposition, at this time, that may not be accepted as a fact by those who are present. This proposition is, that any interference with or inhibition of the changes that take place in a child as it develops into maturity or that prevents a child from maturing into a fair representative of the type of the race to which it belongs is likely to develop an individual that under favorable circumstances will become either insane or a criminal, or both.

The reason for this statement is apparent when it is admitted that children manifest many impulses in common with criminals, e. g., outbursts of anger, a spirit of revenge, idleness and often a lack of affection.

These and many other traits that are common to criminals are either eliminated by the influence of moral training and example, or the child develops the ability to properly regulate and control these impulses according to the standard of action of the race of which it is a member.

I do not wish to discuss at this time the immediate effects of syphilis in the production of the criminal type, but wish to present the remote effects of syphilis as an active factor in the production of the criminal type although it has not usually been recognized as a factor of much importance. Syphilis in the ancestor will act as a disturbing factor in the development of the children "even unto the third and fourth generation" and will cause them to be backward in development or to deviate in type. The progeny of a syphilitic ancestor is usually under sized, sluggish in attitude, lacks symmetry of development in a striking manner, and bears the general appearance and demeanor of one much older than his years.

William W. Graves, writing of this class, says: "Many of them develop sexual instincts long before puberty, and these are often gratified by masturbation, sexual intercourse or otherwise. Strenuousness and intensity characterize many of these individuals and before or during adolescence, such mental proclivities associated with the inherently weak constitution, sooner or later lead to an inevitable break, and they make up a large percentage of the cases commonly classified as neurasthenia, hysteria and dementia præcox. Many cases of epilepsy developing in early or later periods of life are to be found in the individuals of the second and later generation. The incorrigible and so-called criminal classes are increased from the ranks of the second and later generations in a degree probably unequalled by any other source."

The part played in the production of crime by the functional disturbance of certain organs and glands in the body has not been given due consideration.

There is much evidence to show that injuries, tumors and excessive development of the cerebellum causes a person to run the gamut of sexual perversions and crimes.

Lydston says, "Emotional insanity and melancholia—the latter of which is intimately associated with suicide—have been shown to be often associated with disease or injury of the angular and supromarginal gyri."

And again he says, "Gall claimed that the anterior part of the temporal region of the brain was the seat of the impulse of theft."

According to the testimony of many writers a pathologic change in the temporosphenoidal lobe is likely to develop emotional disturbance leading to murder, and that the majority of murderers show an over-development of this lobe.

Since inhibition is a function of the intellect both of these faculties have centers located in the frontal lobe, and its disturbance thereby impairs both faculties. The noble emotions, as friendship, affection and love, were located by Gall in the occipital lobe.

Athyrea, whether due to atrophy or thyroidectomy, in a child prevents normal development of the body, and causes nervous and mental symptoms with delusions of persecution. In myxedema the mental faculties undergo a change with the development of a condition of melancholia.

Certain changes in the sexual organs are a factor in the production of hysteria in which are found alternating states of excitement and depression accompanied by hallucinations and delusions of persecution.

Infectious diseases sometimes modify the function of the ductless glands, causing a condition resembling drunkenness which may be followed by criminal acts.

The changes in the central nervous system incident to senility cause inadequacy of thought, delusions of jealousy and often crime. Rape, arson and homicide are often committed while in an automatic state following or preceding a convulsion. The pyromaniac is either found to suffer from psychical epilepsy or is prompted to the crime by an obsession which becomes an irresistible impulse. That other causes than organic lesions may result in the production of crime I will herewith quote the testimony of T. S. Mosby, Esq., of the Missouri bar who, in an unpublished paper, says: "Statistics show very clearly that crimes against the person are proportionately most numerous in warm climates, while in the cool regions crimes against property are the most frequent. In the warm climates of Italy and Spain, we find the maximum of crime in Europe, while the cooler climes of England, Scotland and Holland supply the fewest murders in proportion to population."

He quotes Dr. F. G. Lydston as saying, "The tonic effect of cold weather in maintaining the nervous and mental equilibrium of neuropaths and thus inhibiting crimes of impulse, is obvious. The physiologic turmoil in the sexual system ushered in by spring is well known. Poets have sung of it and rapists have been hanged for it."

Again, he says, "Prof. Enrico Ferri has demonstrated that in France the greatest number of crimes against person are committed in the summer season, while the maximum of crime against property is reached in winter."

It is noticeable that the "great waves of crime" occur in seasons of extraordinary heat and humidity and the center of the "wave" is the great center of population.

An editorial on "Psychic Contagion of Impulse" appeared in the *Journal A. M. A.*, dated Aug. 17, 1907, as follows: "When we speak of psychic contagion in our own time, most people are apt to look on the expression as eminently figurative and as containing very little, if any, literal truth. Many things in recent life, however, seem to make it clear that some not far distant generations will be quite as surprised that the men of our time did not recognize the influence of psychic contagion as we are now amazed at the generations which did not recognize physical contagion as a great force for evil."

My purpose in devoting so much time to the discussion of crime is due to the fact that the subject is given less consideration than insanity.

On reflection it will be seen that all the factors producing crime and all the characteristics of the criminal, enumerated above, are classical causes of insanity and the stigmata of the insane. The points of resemblance between crime and insanity are so numerous that we are led to conclude that their difference is mainly one of degree. In the concluding remarks I will endeavor to show the inherently close relationship existing between crime and insanity both from a physical and psychical standpoint.

The tendency now is to impute a higher degree of responsibility to the insane and less responsibility to the criminal. The insane are frequently found to reason coherently on most subjects. This condition may be explained by the fact that an analysis of the mental wreckage may show a dissolution of only one faculty, therefore a crime committed by these people often bears the impress of forethought, intent and cunning.

Heredity may endow a person with a morbid intensity of desires or a weakened control. The results that may be expected in either case are either crime or insanity. The close relation that exists between crime and insanity was doubtless recognized by Mercier when he said, "Mind and conduct go together. This interaction on each other is close, constant and almost inextricable, and disorders of the one always, no doubt, accompany disorders of the other, though the two are not equally recognizable."

It has been said that the mass of moral humanity is like a great flowing river with the insane on one side and the criminals on the other. This theory is neither borne out by experience nor psychologic reasoning.

The history of commitments in general, indicates that the insane are usually considered "cranky," fanatical or eccentric during the early

stages of mental derangement, and the authorities are not aroused to the seriousness of the disorder until some violation of either the moral or civil code is committed. The following statement clearly sets forth the natural order of sequence in which insanity and criminality usually occur. For the sake of an illustration, suppose that a person passing a shop window sees a jewel of great value and becomes conscious of the presence of a strong desire to possess it. If he arrives either by instinct or process of reasoning at the conclusion that he cannot afford to risk his future welfare for the sake of the gratification of the pleasure of present possession, we call him a sane and virtuous man.

Should a second man, while passing by, see the same jewel and after due consideration arrive at the conclusion that he can not afford to jeopardize his future welfare for the sake of the pleasure of immediate possession, but that he will wait until darkness falls, and the streets are practically deserted, and then, because the chances of detection are more remote, he is willing to risk future benefits for the sake of the pleasure of present possession, we would without hesitation call him a criminal.

Should a third man while passing see this jewel, and although the proprietor is within the shop and the streets without are thronged with passers by, decides to risk his future good for the sake of the pleasure of immediate possession by immediately and forcibly taking the jewel without regard to apprehension, we would pronounce this man insane.

For a person to escape a career of crime and an insane existence they should both know the right and possess the ability to do it. An inability to know the right indicates an intellectual disturbance and an inability to do the right implies a disturbance in the volitional field and any derangement in either or both renders the person insane and usually makes him a criminal.

Depression of the apathetic field with its correlated symptoms is called melancholia and frequently prompts to suicide. Systematized delusions of persecution gradually changing to delusions of grandeur, with transformation of personality is called paranoia, yet in reality this is the ensemblage of the mental qualities necessary to a murderer.

The parasyphilitic lesions giving rise to general paralysis of the insane causes in the majority of cases the expenditure of all funds, the contraction of unreasonable debts, and finally the open violation of the moral code.

Clouston said, "Murder by an epileptic should be looked upon as being as much a symptom of his disease as larceny by a paretic."

The manie depressive group do not commit crimes as frequently as some other types since the diversibility of the intellect permits it to discard a criminal thought before the volitional powers can execute it. The senile dement will often perform acts of indecency, theft and at times suicide. Suicide may occur in involutional melancholia owing to the emotional depression resulting from the belief that they have committed some unpardonable crime. The history of the imbecile is often a recital of petty thefts, rape, assaults and homicides.

It will be seen from the above that either crime or insanity may result from a disturbance in the equilibrium of either the intellectual, emotional or volitional field. This disturbance may be the result of the deterioration of certain faculties or the over-development of the remaining complemental faculties.

RESEARCH IN PSYCHIATRY *

BAYARD HOLMES, M. D.

CHICAGO

Nearly fifteen hundred persons went down on the *Titanic*. This is less by 500 than the number of persons committed to the institutions of the insane in the state of Illinois in one year. The whole world is aroused in an effort to prevent the repetition of a similar nautical calamity. Nevertheless the whole world is committing to the institutions for the insane within the domains of civilized countries, not less than 80,000 citizens a year from every walk of life, from the rich and the poor, from the educated and the uneducated. Moreover, this has been going on for fifty years and yet no vigorous, rational, adequate methods have been instituted or practiced, designed to discover the causes of the diseases or physical conditions which lie at the bottom of insanity.

I know very well that the tendency of the time is toward the mystical, the intangible and the occult. Mysticism has even entered mathematics, and among a certain class of mathematicians, has almost obtained the position of symbolism which it occupied among the pre-Christian mathematicians in Egypt. Mysticism has taken its place in the hypotheses of physics and attained such influence that at the last meeting of the Association for the Advancement of Science, the President of the Section of Physics, Professor Magie, found it necessary to combat this tendency by devoting to it a large part of his address. Mysticism has come into a department of natural philosophy which now forms a world-wide cult, and one of its prophets, William Fliess, devoted a whole book to the exposition of a mystical family substance, the existence of which he established by most remarkable mathematical formulas, and the rhythmical fluctuations of which he illustrates by numerous examples. These fluctuations, he shows, are exactly timed by the mystical numbers, 28 for the female and 23 for the male. By this system a peculiar therapeutics has been still further developed by Max Siegmund, who shows that the coincident sickness of blood relations are to be treated by treating the father, the mother, the uncles and the aunts whenever the physician is called to see the child with colic or hives.

During the past fifty years the alienist, the diplomat, the rhetorician and the philanthropist have had their way with the institutions for the insane and with the departments of charities and correction. It is now time for the scientist and the physician to take hold of the problems of insanity.

* Read in a Symposium on Mental Diseases at Hotel La Salle, Chicago, April 19, 1912.

If, as rational and scientific men, we wish to discover the causes of insanity, we ought to pursue those methods which have been rewarded by success in discovering the causes of other afflictions of mankind. We should do this in spite of any tendency of the time toward any other method. We should not be led astray by the success of occultism in building temples or in curing complaints.

It is perfectly legitimate to experiment in the crude and single-handed manner which brought immunity against small-pox; it is perfectly legitimate to use remedies which are applied empirically or by accident, as mercury has been used against syphilis, but it is far more hopeful to undertake such a systematic course of investigation as has led to the discovery of the cause of the disease, such as Koch instituted in tuberculosis, and such as the various laboratories have undertaken in investigating the sleeping sickness and other tropical diseases.

Research for psychiatry, then, ought to be undertaken according to the clinical method of Sydenham and the laboratory method of Metchnikoff, and every state should expend for research not less than 10 per cent. of the appropriations which are so liberally made for custody and confinement.

In the early explorations into disease it was possible for a man to make a great discovery single-handed, but any reasonable, rational research for psychiatry must be a research *en masse*. A squad of research men must pursue truth through this dense and dark continent of our ignorance. Every clinical technologist should do his part — the chemist in his department, the experimental biologist in his department, the bio-chemist, the bio-metrician, the serologist and the cytologist in their several departments, to bring about the subjugation of parallel lines of nature's entrenchment against our science and our national health.

Probably the first department of a laboratory of research should be manned by a skillful bibliographer. The library has reached such proportions and such complexity that no individual who has exacting duties at the laboratory desk or in the clinical laboratory can possibly find the time necessary for bibliographic research. This research must be in the hands of an expert and sympathetic bibliographer. He must have at his hand not only the current literature of our periodicals, but he must also have accessible the bibliographies of the past.

The workers in a laboratory of psychiatry need to have at their disposal the literature of modern science, and the location of such a library will determine the proper location of a laboratory of psychiatry: hence it appears at the very onset that an efficient laboratory for psychiatry must be located where libraries already exist. This would naturally bring the laboratory to the university, or, at least, to the largest cities in the state.

The number of workers in a laboratory of psychiatry ought to be sufficient to cover the whole field of the natural sciences with an expert at the head of each department and special workers under each of these heads.

Thus again it seems that such a corps of experts could be found in each of the universities. They would be men who had arrived at a

prominence in their profession, which would save the workers time and effort by their advice and by the conception which their position and attainments afford.

The number of men who are prepared for such a laboratory is almost unlimited, provided they are selected from the universities at a sufficiently early age. All the great research men have come from general laboratory training into their special field early in life. The fact that research in psychiatry has never been seriously and aggressively undertaken has allowed this department of medicine to escape the attention of prospective research men. In France the Prix de la Société médico-psychologique for the year 1912 amounts to only 2,400 francs, and there is no laboratory similar to that of Metchnikoff in which research in this direction is exclusively encouraged. A body of research men cannot be built up by offering prizes such as the Nobel Prize, because the only persons fitted to undertake the work must necessarily be young, and dependent upon a salary for their support. The prize cannot be given to a squad, even though the squad should attain an unaided and undisputed achievement; the reward will eventually come to the state and society as a whole, and the research men should be placed on a civil service basis, with a growing salary and an adequate pension in case of disability. Bacteriology and vivisection experiments are dangerous occupations and the risk to the research man is a matter of lamentable and common knowledge.

If private initiative can be useful in any way in establishing a laboratory of psychiatry it must do so with the full cooperation of all the existing endowments of the university, and with a complete cooperation with a neighboring institution for the insane. No less than eight scholarships, with a value of \$2,000 a year for salaries, can hope to make even a beginning in the research which shall dissipate our ignorance of the etiology of even one of the insanities. Such a corps could be attached to a university like that of the University of Chicago, but it would necessitate the building of an institution for the insane with a full corps of physicians and nurses, and adequate for the accommodation of twenty or thirty patients of a single clinical disease. Moreover, this institution, on account of the monopoly which the state maintains in the custody of the insane, would necessarily be under state supervision.

At Johns Hopkins there is a small endowment of \$500,000, at present under the directorship of Adolph Mayer, which is completely given up to the psychogenetic origin of the insanities. Therefore nothing can be expected in the rational study of the physical conditions of the insane at Johns Hopkins unless another private endowment is established there.

At the Rockefeller Institute a little work has been undertaken which verges on psychiatry, but the field is so enormous and the demands for more promising and quicker achievement have been so alluring that little can be expected from New York for some years to come.

As the burden of the care of the insane is now met by the legislatures of the several states, we must naturally look to the same legislatures for a rational expenditure designed to do away with the need of this unproductive tax.

In the states of California and Wisconsin ideal conditions exist for the establishment of a laboratory of psychiatry in the university of the state, with full cooperation with the institutions for the insane located in the immediate vicinity, in pursuing this promising research. In the State of Illinois, the state university is almost out of the question on account of its remoteness from the institutions of custody. It is likely that Dunning will soon be rehabilitated and made one of the principal asylums of the state. It is more than likely that an aroused public conscience will demand that a reception hospital be established in the City of Chicago for the uncommitted insane, and this might be attached to and be a part of a hospital for research. The advantages of the great John Crerar collection and the aggregation of scientists at the University of Chicago would make this combination an ideal one, provided the prerequisite cooperation could be established between the University of Chicago and the Board of Administration of the state.

The very atmosphere of research which surrounds the University, and the highly optimistic spirit of the City of Chicago itself, would promise well for the enthusiasm of laboratory workers, who are so often depressed by the discouragement which naturally attends protracted labor upon a false and fruitless lead.

When for a term of years the state has devoted a tithe of the largess now expended in custody and confinement upon research and cure, when all natural, rational avenues for disease have been followed out, and no physical basis of such long-lasting conditions as dementia praecox have been discovered, then it seems to me that every good citizen, that every rational physician, that every sociologist and humanitarian will unite in such a legislative effort as will make it possible to obtain for these afflicted ones the remedy of death. By the law of equity which provides a remedy or attempts to provide a remedy for all legal torts, it ought to be possible for the friends of the insane to appear in court and secure an order which would command the sheriff or his deputy to execute the hopelessly insane and remove them from the consuming custody of the state, from their own hopeless calamity, and give their relatives and friends the consolation of the end.

TONSILLECTOMY IN CHILDREN

G. W. Boot, M.D.

CHICAGO

Removal of tonsils and adenoids has been found to benefit so many conditions that a description of the method followed by the author in the removal of 400 or 500 tonsils yearly in the Children's Memorial Hospital may be of interest to those doing such work elsewhere. The patients are children varying in age from a few months to 13 years. Older children are not admitted to the Children's Memorial Hospital.

Cases Refused Operation.—The following classes of cases are refused operation until the conditions mentioned are rectified: marked anemia, albuminuria, hemophilia, acute inflammations of the tonsils or vicinity, fever.

Anemia.—The removal of tonsils is a work of convenience and need never be one of haste. Since tonsillectomy is rather a bloody operation it is thought best to postpone operation if the child shows a marked degree of anemia. The child is put on iron and good diet and operation is done after the anemia has improved.

Albuminuria.—Acute nephritis following anesthesia occurs sufficiently often for one to be careful in advising general anesthesia in a patient whose kidneys are damaged. For this reason if the urine shows albumin or casts the operation is postponed until treatment has cleared up the condition, except in cases where it is thought that the albuminuria is the result of the tonsillar infection.

Hemophilia.—No history of hemophilia has been found in the cases operated on. My interns are instructed to inquire carefully for a history of hemophilia. In spite of our care in this respect one or two cases have had considerable hemorrhage following tonsillectomy.

Acute Inflammations of the Tonsils or Vicinity.—Because of the increased vascularity of the parts and because of the increased danger of infection following tonsillectomy if the vicinity is inflamed, acute inflammations are considered a bar to operation.

Fever.—No child is operated on whose temperature is not normal. If there is fever the operation is postponed until the cause of the fever is ascertained and the child's condition has become normal.

Preparation for Operation.—The patient is admitted to the hospital the day before operation and the usual preparation for any operation given. If the operation is done in the afternoon the patient has bread and milk for breakfast and no food afterward. While waiting for operation the laboratory examinations are made and if any contra-indications are found the operation is deferred. A half hour before the operation the child is given a hypodermic injection of $\frac{1}{150}$ gr. atropin sulphate.

Anesthetic.—Ether is invariably used for the anesthetic. It is given by means of a paper cone covered with a clean towel and filled loosely with gauze. A fresh cone is used for each patient. The patient's eyes are covered with cotton wet with water. The cone is placed over his mouth and nose and a little ether dropped into the open end of the cone. The ether is dropped slowly at first but afterward in gradually increasing amount as the patient becomes used to the smell. If the patient makes any fuss about the ether he is told to blow it away. This little maneuver works unusually well. The efforts of the patient to blow the ether away result in his taking an increasing amount of anesthetic and he goes to sleep more quickly and easily and with less ether. Unnecessary talking is avoided while the patient is going to sleep. Given in this way the ether is not particularly disagreeable. Anesthesia is rapidly induced and a half pound of ether suffices for four operations. The

anesthesia is pushed only to the point where the pharyngeal reflex is abolished. As soon as the patient breathes slowly and regularly without a catch or moan to the breathing the cone is removed and the operation begun. Sometimes the tonsils are so large the patient chokes on them if fully anesthetized. In such cases one tonsil is removed under incomplete anesthesia.

Operation.—The patient lies on his back with the head turned toward his left. A small pillow is placed under the head and right shoulder. A Denhart mouth-gag is inserted in the right side of the mouth. A Pyncheon tongue depressor is placed in position by the operator who sits on a high stool before the patient. The tongue depressor is intrusted to the assistant who stands behind the patient and whose duty is to hold the depressor exactly where it is placed by the operator. The operator wears an electric headlight of simple pattern; one holding a 16 candle power globular bulb with silvered back and requiring no rheostat. This illuminates the field of operation well and the light does not stand out from the head far enough to be in the way. There is no trouble with lamps burning out and no assistant is needed to control the rheostat.

The left tonsil is removed first. It is seized by the Pyncheon tonsil forceps and drawn toward the median line and then pushed away from the median line and under the anterior pillar. The object of this maneuver is to define accurately the position of the anterior pillar. The margin of the anterior pillar being clearly defined the tonsil is again drawn toward the median line and the mucous membrane incised slightly with the long handled scalpel. This cut must be very shallow or it will pass through the capsule of the tonsil and the operation rendered difficult. The scalpel used for this work is one I have had made to order by F. A. Hardy & Co. It is a small scalpel with an abrupt cutting end on a long slender handle. The cutting end is kept very sharp. The cut is made about a half inch long. With a long and rather slender pair of blunt pointed scissors curved on the flat the anterior pillar is pushed outward away from the tonsil. One blade of the scissors is inserted between the capsule of the tonsil and the pillar and the tissues cut around the lower border of the tonsil. The scissors are then reversed and the cut made upward thus encircling the tonsil except for its posterior attachment. These cuts are made as close to the tonsillar border as possible. The scissors are now closed and used as a blunt dissector. Any bands holding the tonsil down are cut with the scissors until the tonsil can be easily slipped in front of the anterior pillar. The forceps are now removed and again attached after passing through the loop of a Tydings snare. The wire loop is made as small as can conveniently be slipped over the tonsil. No guard is used for the wire loop. No. 8 is the size of the wire used. The tonsil is now drawn toward the median line and the loop of wire tightened around its remaining attachment. As soon as the tonsil is cut off the tonsillar fossa is wiped out with a sponge on the end of a long curved throat hemostat. Another sponge is placed in the hemostat and held against the tonsillar fossa by an assistant. More anesthetic is given, this time by pouring ether freely on the lower part of the cone.

While the ether is being given the operator reshapes the wire loop for the other tonsil and when this is done the operation is continued. As soon as the hemorrhage is checked from the second tonsil the adenoids are removed with a Brandagee forcep followed by an adenoid curet. The bleeding is stopped and the child put to bed.

Precautions.—Great care should be used not to get the uvula caught in the snare. The operator must be sure it is not included before tightening the snare. Neglect of this precaution has caused many unfortunate results. I know of one instance where the whole of the uvula and a portion of the soft palate were removed leaving a condition of cleft-palate and ruining the boy's voice. In another case the uvula, a portion of the velum and most of one of the pillars were removed also with unfortunate results. These accidents occur to beginners and to occasional operators who get frustrated and in their blind excitement work without seeing what they are doing.

I know of two cases where diphtheria followed on the operation wound. For this reason the patient should be kept under observation for a few days. The grayish slough following tonsilleectomy at times resembles very closely the false membrane of diphtheria and cultures are needed to differentiate them.

After-Treatment.—The patient is watched by a nurse until he is fully awake and no longer spitting blood onto the bed-clothes. He is allowed water and soft diet almost as soon as he wishes them. Unless there is some complication he is allowed to go home the day following the operation. No gargles are used. Their use is painful and the distress caused by their use more than offsets the good to be derived from them in uncomplicated cases.

Time Required.—The time required for tonsilleectomy after the technic has been acquired is about fifteen minutes including the anesthesia. I have frequently operated on six patients in seventy-five minutes including the anesthesia. As soon as one child was finished it was carried out, the dressings of the operating-table changed and another child brought in and anesthetized. The best time I have made was four cases in forty minutes. Single cases are frequently anesthetized and tonsilleectomy done in ten minutes.

This method is applicable to all sorts of tonsils, buried as well as prominent. It is strictly surgical. The tonsil is wholly removed and nothing but the tonsil. If for any reason a part of the tonsil escapes the snare as happens if the tonsil is not loosened up enough before applying the snare I find the small Tydings forceps useful in holding the fragment remaining while applying the snare to it. If this fails the piece may be removed with the tonsil punch. A tonsil hemostat is useful if there is persistent hemorrhage. I do not leave it on after the patient leaves the table. If bleeding is persistent and resists pressure the bleeding point is caught if possible and ligated. If this fails a sponge is placed in the tonsillar fossa and the anterior and posterior pillars sutured together over it. For this purpose I keep in readiness a Yankauer needle

for intranasal suture with the curved end set on the shaft at an oblique angle.

Indications for Tonsillectomy in Children.—1. Any tonsil large enough to interfere with breathing or voice production.

2. Any tonsil from which plugs of cheesy matter or pus can be pressed.

3. Any tonsil giving rise to peritonsillar abscess.

4. Any tonsil subject to repeated inflammation.

5. Rheumatism or joint infections.

6. Chorea.

7. Endocarditis

8. Tubal occlusion caused by enlarged tonsils. Only the first two can be diagnosed by inspection of the throat. I have frequently been surprised on removing tonsils that did not appear enlarged to find large masses of cheesy matter appear as the snare tightened. Since tonsils normally atrophy and almost disappear at puberty I have less hesitancy about recommending their removal at that time or later.

Results.—Tonsillectomy will not give a defective child intelligence but it will make a great many stupid acting children brighter. It is a common thing to hear that a child that was having difficulty keeping up with his class in school, who was getting grades of C habitually before tonsillectomy, and removal of adenoids, after the operation keeps up with his class easily and gets grades of A and B. Children who have had tonsils and adenoids removed eat better, sleep better and are more active physically and mentally than they were before. I have never seen any injury to the speaking or singing voice by a proper tonsillectomy; on the contrary, the voice becomes more resonant and is usually much improved. Whenever tonsils are removed adenoids, if present, and they are usually present when the tonsils are enlarged, should also be removed. It is usually a mistake to remove tonsils and leave adenoids behind as it is equally a mistake to remove adenoids and leave enlarged tonsils behind. The causes of enlargement of the one are the causes of enlargement of the other. When the operation is done as above described it is practically free from danger, and the good resulting is very great.

122 S. Michigan Avenue.

THE RELATION OF THE GENERAL PRACTITIONER TO THE FIGHT AGAINST TUBERCULOSIS

O. W. McMICHAEAL, M.D.

CHICAGO

Dr. Richard C. Cabot of Boston, at the annual meeting of the State Medical Society of Wisconsin in June, 1911, said: "I know from my own certain knowledge that the vast majority of the physicians of Massachusetts cannot make a diagnosis of early tuberculosis, and I know that, not from what physicians or patients have said to me, but from my own supervision of these men under my own teaching. I have a postgraduate

course each summer where I see a good many men from my own state and from other states and I put them up against cases of incipient tuberculosis mixed up with normal cases and they cannot tell the one from the other. I do not believe one-tenth of the physicians of any state in the Union can tell incipient tuberculosis when they see it, from physical signs."

This is a severe arraignment of the medical profession, but before we declare it unjust let us look at the evidence.

More people die of tuberculosis than from all the other causes of death combined. The average duration of tuberculosis is four years, but the great majority of cases are not recognized more than a year before death.

In the Boston examining office of a Massachusetts state sanatorium for incipient tuberculosis two-thirds of all those who apply for admission are rejected because they are too far advanced.

In Wisconsin, out of 741 cases of tuberculosis only 468 were given a diagnosis of tuberculosis after consulting from one to nine physicians.

These statements and the testimony of sanatorium physicians everywhere sustain the indictment. The average physician does not make the diagnosis until the disease is far advanced. One of the principal reasons for this is that the diagnosis of incipient tuberculosis is an exceedingly difficult thing, and the general practitioner is not in the habit of making thorough physical examinations frequently enough to enable him to so familiarize himself with the normal that he can readily detect the abnormal. By thorough physical examination I mean one made with no clothing above the waist.

Another reason is that there has not yet been a general adoption of the use of tuberculin as a diagnostic aid, and a further reason is that physicians do not avail themselves of the facilities afforded them by the state and local health boards for the free and frequent examination of sputum. If routine sputum examinations were made of "bad colds" and "bronchitis," more cases of moderately advanced tuberculosis would be recognized in the curable stage.

The vigorous campaign inaugurated by the various antituberculosis societies has resulted in the education of the people to the point where they are beginning to demand of the medical profession an advanced degree of skill in early diagnosis, and if the profession is to hold its place in the respect of the public there must be a more general adoption of the newer diagnostic methods.

Now that there are so many institutions for the care of incipient cases those who are rejected because they are too far advanced will soon call to account the family physician who allowed them to reach that stage.

Since the antituberculosis societies are educating the people and the people everywhere are being urged to consult their family physicians the family physician must be prepared to render the service expected.

There are some medical men who have a feeling of antagonism toward the whole antituberculosis movement, and who feel that it is an invasion of the field of the physician. That it is such, is perfectly true and it is

an invasion rendered necessary by the attitude of these same physicians who have fallen short in their duty to themselves, their patients and the public. To themselves first because of their neglect of a department of medicine as important to their selfish interests as any other; to their patients because of their failure to recognize the significance of the minor ailments which are the early manifestations of tuberculosis, and to the public, because of their indifference toward a contagious disease.

This is the type of physician who cures a tuberculous gland and when healing is complete gives the patient no further thought. From the position of honor as the family physician and the guardian of the family health he has fallen to a lower plane and is a mere attendant on urgent need.

How many physicians who find tuberculous glands in a child on a farm ask the farmer if his cows have been tuberculin tested? How many physicians apply the von Pirquet test to the children in a family where there is a case of tuberculosis?

Tuberculosis, like the malefactor of great wealth, should suggest the question "Where did he get it?" When consulted on a case of tuberculosis we should be persistent in seeking out the source of infection. We should not be content with the information that the grandfather's great aunt died of consumption and call it "heredity." Let us look for the contact just as we would in scarlet fever. Oftener than we imagine the infection can be traced to some other case of the disease.

The most vigorous campaign conducted by an antituberculosis society cannot begin to compare in effectiveness with the results that can be obtained by a group of family physicians.

The antituberculosis organization which will accomplish most is a local medical society which will arrange for its meetings a series of clinical lectures and demonstrations of the methods of employing the various aids to diagnosis.

4 West Ontario Street.

TUBERCULOSIS OF THE PATELLA*

JOHN B. MURPHY, A.M., M.D., LL.D.

CHICAGO

I wish to cite to you to-night the results obtained in two cases of tuberculosis of the patella. Considering the frequency with which tuberculosis affects the other bones which enter into the formation of the knee-joint, it is surprising that the patella is so rarely involved. It is particularly surprising, in view of the fact that the patella is exposed and subjected to trauma more than any other bone in the body. Why should it escape tuberculosis? It probably escapes tuberculosis because of its peculiar arterial supply; it has no capillary loops in it; it has no line of demarcation between the epiphysis and diaphysis, as exists in the other bones of the knee-joint. When the patella is traumatized,

* Read before the South Side Branch, Chicago Medical Society.

there does not seem to be any tendency to the deposit of tubercle bacilli in it as is the case in other bones subjected to trauma.

In looking over the literature on the subject, I was astonished to find how little has been written on tuberculosis of the patella. I have compiled statistics, as near as I could find them, of all the published cases. There is about one case of tuberculosis of the patella to twenty or twenty-five cases of tuberculosis of the knee-joint. In one author's report it ranges from one case of tuberculosis of the patella to something like 200 cases of tuberculosis of the knee-joint.

When tuberculosis is present in the patella, it takes one of two courses. It may extend to the surface and rupture through the skin, forming a sinus leading outward from the tuberculous focus in the patella. The greatest tendency, however, is for the disease to pass inward and attack the joint. The patella is separated from the joint by a thin cartilage, and that cartilage readily yields as the tuberculosis approaches the joint. The tubercular focus ruptures into the knee-joint and causes a greater or lesser degree of synovial tuberculosis. It may involve the other bones secondarily.

During the time when excisions of the knee-joint were common, primary tuberculosis of the patella was reported by a number of authors. In recent times, however, when excisions have become less frequent, primary tuberculosis of the patella has disappeared from the literature.

In one of the two cases to which I wish to refer, the patella was almost completely destroyed by the disease. In the other case there was a pathologic fracture, with considerable separation of the fragments. One of these patients was operated on June 13, 1904. The patient gave a history of great impairment of the function of the knee-joint, which had existed for a period of four years, with pain and sensitiveness on pressure. In this case the patella became greatly enlarged. The enlargement of the patella is so pronounced in these cases that the primary or initial diagnosis in a large percentage of the cases has been sarcoma of the patella. But primary sarcoma of the patella is very rare. The pathologic picture of tuberculosis differs from sarcoma in the fact that there are a number of separate lesions, whereas in sarcoma there is but one disease focus in the bone. There were a number of foci of tuberculosis scattered throughout the bone in my case. In these cases we also have a pronounced hydrops of the knee. It is a secondary hydrops which also occurs in connection with tuberculosis involving the other bones of the knee-joint.

We now come to the important subject of treatment. What should we do for a case of tuberculosis of the patella? In figuring out the treatment of these cases I decided to adopt this plan: to make an incision along the outer side of the patella up into the vastus externus, removing the entire patella from beneath the aponeurosis patellæ, then dividing the quadriceps tendon by two parallel incisions extending upward from the patella for about 4 or 5 inches, then making a third incision uniting the two parallel incisions above and swinging this flap down over the site of the patella and attaching it by suture to the ligamentum patellæ. In the first case we had no inflammatory reaction following the operation.

There is perfect extension, and flexion to better than right angles. There was no edema, no swelling, nor is there anything in the patient's gait now which would lead anyone to suspect that he had had such a serious operation performed as the removal of his patella.

In the second case there was considerable swelling of the joint, with enormous enlargement of the patella, so that it appeared to be twice or three times its normal diameter. This patient, in walking up the steps one evening, stubbed his toe and suddenly he was unable to walk, having sustained a pathologic fracture of the patella from a slight trauma. There was much effusion in the joint. He was put at rest for a time, and preparatory treatment was undertaken for the operation. I believe that this preparatory treatment is most important in connection with these cases, and the question naturally arises, how can we prepare a knee-joint so that we can open it and do such work as we may deem necessary, and secure it against infection?

You will recall that in the management of fractures of the patella formerly, it was the practice to wire them immediately, but this treatment was attended with many disastrous results. So serious were the results, and so often did infection follow operation on the knee-joint, that primary wiring was abandoned. And then the plan of wiring these fractures ten or twelve days after the initial trauma, when the tissues had reacted, was resorted to as a means of repairing fractures of the patella where the separation of fragments was great. This gave good results.

In investigating why better results were obtained by treating these fractures ten or twelve days after the initial trauma, the explanation given originally was that the tissues, which had been recently traumatized, were not in a condition to withstand infection; that they were not in as good condition to withstand infection as in the case of a primary operation on the knee-joint, or not in as good condition to withstand an operation as after the occurrence of the traumatic inflammation. Why? Because following a traumatic inflammation, there occurs an intense infiltration; the bone is thickened, with cofferdammed lymphatics. The tissues have reacted to the traumatic inflammation, and offer the greatest resistance against microbic invasion. That, I believe, is the explanation, but it matters not whether that explanation is true or not, the results are the same.

Primary wiring of the patella has been abandoned, and secondary wiring of it has been considered a proper and legitimate operation. Formerly, acting in accordance with the principles of antiseptic surgery, we used formalin with iodoform and glycerin in the treatment of tuberculous joints; then we began the treatment of hydrops of the knee with injections of formalin and glycerin only, without the addition of iodoform. Later we carried on a number of experiments, injecting from 2 to 5 per cent. of formalin into the knee-joints of dogs. We found that a 2 per cent. solution of formalin injected into the joint of a dog produced edema, swelling and redness of the joint; that a 3 per cent. solution produced an intense edema; that a 5 per cent. solution produced necrosis

of the synovial membrane just on the edges of the cartilages, but that it did not produce extensive necrosis. In the treatment of hydrops of the knee, in the treatment of acute traumatic effusions, we found that the injection of a 2 per cent. solution of formalin was ample to cure the hydrops. In the acute infections of the joints, if the joint was aspirated and the pus removed, and the aspiration and injections were repeated every ten or twenty-four hours, depending on the degree of effusion, with three or four injections the suppuration would cease and the case would go on to recovery.

I mention this because it led to the plan we are following now in connection with operations on the knee-joint, and which was the one we resorted to in this case. A long time had elapsed since the occurrence of the fracture. We prepared the knee-joint by aspiration, and injected 3 drams of formalin solution, which produced a severe reaction in the joint. Shortly after this the effusion and pain subsided, and a week from that time we opened the joint, made an incision into the patella, severing the aponeurosis of the patella in front, and then did exactly the same operation which was done in the first case, three and a half years ago. There was no effusion into the joint after the operation. There was no filling of the joint. This was a common and rather annoying occurrence in cases of traumatism of the knee-joint or following operations on the knee-joint where the capsule was opened and the synovial surface manipulated. There was no elevation of temperature in this case; there was no inflammatory reaction, and we succeeded in getting the same good result that we obtained in the first. The operation was done September 21.

After utilizing the flap of the quadriceps tendon for this purpose, I began to use it for another purpose, namely, in cases of clean-cut fracture of the patella with failure of union, or a secondary fracture, with great separation of the fragments, so that it is impossible to secure their apposition. In fractures of the patella, even with ligamentous union, we can get fairly good results if the ligament is strong enough. That is very well illustrated in the case of a patient who is in the hospital now with another trouble. This patient sustained a fracture twenty-eight years ago. There is a great degree of separation of the fragments of the patella; still he walks around and has perfect use of his patella.

A most important matter in these cases is the preparation of the joint for operation. I believe we can so repair the joint that it will offer a maximum degree of resistance by inducing chemical inflammation, and I believe that such a chemical inflammation is best produced by formalin. In the original experiments with formalin injected into connective tissue, it was found that formalin produced a greater reaction in connective tissue than any of the medicaments in common use, except mercury, but mercury produces necrosis and brings about the physical characteristics of pus.

DR. MURPHY (closing the discussion): I desire to thank the gentlemen for participating in this discussion. I will now mention the technic a little in detail, as requested by Dr. Bevan. Two longitudinal incisions are made to the outer and inner sides of the patella, extending well up

on the quadriceps tendon and down close to the patella. These incisions are united at the upper end. Then you can bend the knee and by making lateral traction you can inspect all the bones of the joint. After that inspection I bring down the flap from the quadriceps tendon, so that the upper free end can be united to the patella, suturing it with kangaroo tendon, and not with wire. The technic of the former Dr. Harris has clearly pointed out to you. Local leukocytosis or local immunity is developed and the patient has a lessened resistance to infection. That is a law which does not concern merely the knee-joint. A medical student has a dissection-room infection from a prick of a needle. If he does not get local infiltration, his glands will become swollen, and he will have septic symptoms inside of twenty-four hours. A local coffer-damming from hemorrhage in the knee-joint is the reaction of the tissue, and microscopic examination of sections of the synovial membrane after a fracture, or after injection with formalin, will show you this local immunity as well as constitutional immunity to which Dr. Harris has referred, and which offers resistance against infection.

Formalin has another effect. I mentioned in connection with it that it causes what to disappear? Hydrops of the knee. You have, for instance, a chronic case of hydrops of the knee; the injection of formalin will cause it to disappear in a short time.

A patient from Bloomington was referred to me eight weeks ago with hydrops of the knee. The knee had been aspirated and injected with 5 per cent. phenol solution and with 2 per cent. formalin, and within two weeks complete absorption of the fluid had taken place. There was no further effusion into that joint; there was no further pain. This experience is not based on one or two cases, but on a large series of cases. In this case, following the operation, there was not the slightest effusion from the trauma of the operation; there was no swelling; there was no edema of the soft parts, and no effusion into the knee-joint, and this is largely due to the resistance that is developed by waiting in fracture cases. It lessens the inflammatory reaction, which everybody fears who has had much experience with knee-joint cases. I never open a knee-joint or do knee work without having a sense of fear of infecting it. I can operate on other portions of the body and feel about as secure as it is possible to feel, but in connection with primary operations on the knee-joint, and primary operations on many other joints, I know that the tendency is to cause effusion and thus increase the danger of infection after transudation has taken place. Local immunity must be recognized in every position of the body. You will remember that in the early history of asepsis we had some fear about attacking pathologic conditions in the pelvis. We were afraid to attack tumors in the abdomen, and you will remember how it taught surgeons to get the best results in cases that had some trauma or inflammatory condition. We do not wait for that in the abdomen or peritoneum, because we have there a membrane that has a maximum resistance; in the knee-joint we have a membrane that has medium resistance; the pia mater is a membrane that has a minimum of resistance. So far as the liability to infection and the

destruction effects after infection are concerned, in every case in which we can have an infiltration we have a cofferdam established, and we have conditions there which prevent the spread of inflammation.

DR. BEVAN: In that same connection, suppose, Dr. Murphy, you had a foreign body in the knee-joint, would you regard it as the best treatment to repair the knee-joint before you removed the foreign body?

DR. MURPHY: Do you mean a loose cartilage?

DR. BEVAN: Yes.

DR. MURPHY: Yes, if you can locate the loose cartilage, you have no trauma following your work on the joint, even though you may have to make quite an extensive resection.

THE ANTIFORMIN-SEDIMENTATION METHOD OF SPUTUM EXAMINATION FOR TUBERCLE BACILLI

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While the ordinary method of sputum examination is satisfactory in cases where the tubercle bacilli are found in sufficient numbers, it is deficient in cases where the number of bacilli in the whole specimen is limited. In a fair percentage of such cases the bacilli will escape detection.

Since the discovery of the tubercle bacillus by Koch, methods have been suggested by various laboratory investigators to overcome the failures encountered in the use of the old method of staining smears made from those particles of sputum which would seem most likely to contain the bacilli.

A few of these are briefly as follows:

1. Beidert's method consisted in adding 5 c.c. of distilled water to 15 c.c. of sputum, making the mixture alkaline with from 4 to 8 drops of sodium hydrate and boiling until the solution was homogeneous. After boiling, 15 c.c. of distilled water was added and the whole was sedimented. Smears were made from the sediment.

2. Czaplewski used 0.2 per cent. solution of sodium hydrate 12 parts, sputum 1 part, neutralized with acetic acid, boiled and then centrifugated.

3. Spengler diluted the sputum with an equal quantity of water, made it alkaline with sodium bicarbonate, then added pancreatin as a digestant. He kept the mixture in the incubator twenty-four hours at 37° C. and then sedimented.

4. Delg added a few drops of ammonia to the sputum, an equal amount of 25 per cent. sodium chlorid solution and centrifugated. The high specific gravity of the solution forced the tubercle bacilli to the surface where they could be drawn off by means of a pipet.

Better results have been obtained by the use of antiformin, a solution used in 1900 by Victor and Tornell for cleansing vats. Uhlenhuth in 1908 brought it into use in bacteriologic technic. He used equal parts of Javelle water and 15 per cent. solution of sodium hydrate. A similar

solution and giving equally as good results is the ordinary official Labarraque's solution prepared as follows:

Triturate chlorinated lime 45 gm. with 100 c.c. of water, gradually adding the lime until a uniform mixture is obtained; filter and triturate the residue with 100 c.c. of water. Transfer the whole to a filter and add to the previously obtained filtrate. Shake, warm and filter. Wash and filter with 50 c.c. of water. Then dissolve 32 gm. of monohydrated sodium carbonate in 150 c.c. of hot water and add to the two solutions. The solution should be kept in an amber-colored bottle, rubber stoppered. The chief value of the solution depends on the available chlorine. It is used with equal parts of 15 per cent. solution of sodium hydate.

The apparatus necessary is as follows: one-half dozen plain glass centrifuge tubes with corks to fit; each cork to be used once; a centrifuge; a porcelain jar of potassium bichromate solution. The centrifuge tubes should be kept in the potassium bicarbonate solution when not in use in order to free them from tubercle bacilli collected at any previous examination.

Sputum is collected for examination in wide-mouthed glass bottles containing 2 c.c. of 5 per cent. phenol solution and allowed to stand twenty-four hours before handling.

The technic of application of the antiformin-sedimentation method is as follows:

Using a centrifuge tube as a container, add 2 c.c. of antiformin to 10 c.c. of sputum, cork tightly and shake thoroughly until a homogeneous solution results. Centrifugate for five minutes or longer if necessary and pour off the supernatant fluid. Wash the sediment with normal salt solution and centrifugate again. This last step is repeated, the sediment being washed twice.

Smears are made from the sediment to which a loopful of albumin should be added. They are then fixed and stained with carbol fuchsin and methylene-blue according to the Ziehl-Nielson method. The stained specimen will show some distorted epithelial cells and granular debris staining blue forming a background which facilitates the search for tubercle bacilli. Elastic fibers may be demonstrated if present by staining with gentian-violet from thirty to sixty seconds.

Since November, 1910, on suggestion of Dr. Theodore B. Sachs, the medical director of the sanatorium, we applied the antiformin sedimentation method to all sputa which showed no tubercle bacilli by the ordinary method of sputum examination. The following results were obtained:

(a) One hundred and fifty-three specimens of sputum from 111 cases were examined by the ordinary method of sputum examination and no tubercle bacilli were found. The same specimens were examined by the use of antiformin and sedimentation; twenty-nine, or 17 per cent. of them showed tubercle bacilli. Out of 111 cases previously reported as negative twenty-four, or 21 per cent. became positive.

(b) Twenty cases, or 18 per cent. which showed no tubercle bacilli by either method, and no elastic fibers by the ordinary method of search-

ing for them, showed the presence of elastic fibers after the use of anti-formin and sedimentation.

(c) Antiformin has strong germicidal properties. According to Patterson a 2 per cent. solution in five minutes will kill the ordinary bacteria found in sputum but it does not attack the tubercle bacillus owing to its waxy capsule. It is therefore invaluable in cultivating tubercle bacilli in pure culture from the sputum as first reported by Brown and Smith. This was successfully done by us in fifteen cases. Equal parts of sputum and 15 per cent. antiformin solution were mixed, thoroughly agitated and let stand one hour; centrifugated; sediment washed six times with sterile water and planted on Dorset's egg medium and incubated from fifteen to sixty days.

CONCLUSIONS

1. A larger percentage of sputum specimens are found positive by the use of the antiformin-sedimentation method than by other methods.
2. Antiformin plus sedimentation facilitates the search for elastic fibers.
3. Antiformin is valuable in the cultivation of tubercle bacilli in pure culture from the sputum.

NYSTAGMUS *

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Nystagmus is a term, like nutans, from a Greek root meaning to nod, to be sleepy, to nap, and is used to describe a peculiar, involuntary, oscillatory movement of the eyes. Usually the movement is bilateral and similar in both eyes, though occasionally one sees it only in one eye. It is mostly a lateral movement, sometimes rotatory, rarely vertical. I have seen a unilateral rotatory nystagmus, which is exceedingly rare. The oscillations are regular and rhythmical, as a rule, constant, though often elicited only by putting the ocular muscles on extreme tension. When there is no apparent nystagmus with the eyes fixed in the front position, it can be detected through the ophthalmoscope in the blurring of the fundi.

The nystagmic movements vary from sixty to two hundred or more per minute and extend over an arc of from one to ten millimeters. They cease during sleep. With vertical movements, and occasionally with horizontal, a slight synchronous movement takes place in the lids which must not be confounded with blepharospasm. Superficially these movements suggest a partial rotation of the eyeball around one of its own axes, depending on the alternate contraction of the opposed ocular muscles and due to a disturbance in some central coordinating apparatus. The symptom should not be confused with the voluntary restlessness of

* Read in the Symposium on Cerebellar Vestibular Nystagmus before the Chicago Medical Society, May 8, 1912.

the eyes, frequently observed in hysterics and people with little power of attention, nor with the so-called "searching movements" seen in blind eyes.

It is well to distinguish between nystagmus and pseudonystagmus. In the former the oscillations move, pendulum-like, back and forth through a given point while in the latter they proceed to and from a given point like a rebounding ball. Moreover, they are less regular, rhythmical and constant in pseudonystagmus than in true nystagmus. In pseudonystagmus they never occur in the front position, but only when the eye is turned, voluntarily or involuntarily, in one direction or another.

When acquired early in life the patients are not conscious of their nystagmus and are not annoyed with the apparent constant movement of objects; but when acquired later in life they are conscious of the jactitations and are harassed with the movement, for a time, of external objects. In addition to this apparent movement of objects nystagmus has associated with it other symptoms such as vertigo, at times nausea and vomiting, nodding movements of the head, diplopia, poor vision, photophobia and a tendency to read in vertical lines.

Four general types of nystagmus are wont to be referred to, namely, those due to certain local conditions of the eyes that interfere with vision, especially in childhood; those observed in albinism; the miner's nystagmus; and the forms that accompany various nervous diseases. This is an academic classification, useful in a way, but not very illuminating. Much more to the purpose would it be to differentiate the true from the pseudonystagmus and then, by close analysis of the phenomenon, try and correlate it with the pathophysiology of the condition in which it appears. This has been done lately by Barany and others with not a little success.

The character and bilaterality of the phenomenon point to a central explanation. No mere paresis or weakness of the peripheral muscular system is adequate to account for it. It is clearly a disorder of function and not the direct result of a focal lesion. This is sufficiently indicated in the fact that it occurs in cases with congenital visual defects and seems to occur, as Gowers remarks, most often even in cases of cerebellar tumor wherein there is impairment of vision from optic neuritis. *The function that is disturbed is that of coordination.* The tonic interplay between antagonistic muscles is broken up and transformed into a clonic interplay. As Duane puts it, there is a kind of imperfect or perverted fixation of vision. Normally in the fixation of vision the impulses to the opposed muscles are sent out simultaneously from both sides of the brain. In nystagmus these impulses are sent out alternately, revealing thereby a lack of central coordination. This alternate action of opposing impulses is shown by the remarkable case of cerebellar tumor with nystagmus, cited by Gowers, wherein analogous movements were noted in the pharynx and larynx, the rate of the movement being the same as that of the ocular, namely, 180 to the minute.

Indeed, no explanation of nystagmus to-day is acceptable, or even worthy of consideration, that does not rest on the function of central coordination and the maintenance of equilibrium.

The maintenance of equilibrium and the relationship of the body to its environment is a very primitive and universal function of the organism. In the performance of this function there must be on the one hand an appreciation, consciously or unconsciously, of space in all of its three dimensions and on the other hand a set of antagonistic, highly-toned muscles, ever ready to work coordinately to change the attitude of the body when called for by a change in the environment. The function is therefore one of correction and is ceaseless in its operation. It is a great reflex function and depends on a great and complex sensory-motor arc with a central controlling and coordinating ganglion. Like all the reflexes of the body this is in part perceived by and is in the power of the consciousness. Now what are the composite elements of this great reflex arc that subserves the function of equilibration? First, there are the innumerable afferent elements and pathways that carry sensory impulses toward the centers of coordination. The concept space is the psychologic correlate of movement and it is on the movement required to bring different afferent impulses into similar relationship with different stimuli that the idea of space is built up. All the afferent impulses, especially the kinesthetic impulses, as they are called, from the skin, muscles, tendons, articular surfaces, etc., underlie the conception of space. The retina is preeminently a space perceptor and in the semi-circular canals is a very remarkable arrangement to correspond with the three dimensions of space. From all of these sources, especially the eye and ear, are pouring inward incessantly a complex mass of impulses in which the dominant feature is differentiation in harmony with the spatial differentiation of the environment or aggregate source of multiple stimuli.

The centers of the arc that subserve the function of equilibrium include the ganglionic gray masses at the base of the brain, especially the pontine nuclei and the cerebellum. Here the afferent, kinesthetic impulses, just referred to, are converged, brought into mutual relationship, unraveled, systematized, and coordinated, to be sent out again as efferent impulses for the stimulation of the appropriate muscles to accomplish the desired equilibrium. It is to be noted that the cerebellum, like the cerebrum, belongs to a superimposed reflex system and is not in immediate control of the musculature of the body. These great coordinating centers are purposive in action and stimulate the lower and direct centers that form the final common pathways to the muscles.

The entire musculature of the body receives ultimately and incessantly these systematized and coordinated impulses from the cerebellum and by reason of its remarkable arrangement in mutually opposed or paired muscular masses, constitutes the immediate agent for carrying out the ends of the great reflex arc of equilibration.

The cerebral cortex, wherein we assume the seat of consciousness is located, is external and peripheral to this sensory cerebello-motor

apparatus of equilibration. Occasionally only does it interfere to inhibit or supplement the latter's working when perchance the inpouring of inharmonious and disorderly impulses awakens in the consciousness feelings of distress, such as vertigo.

The discussion of the entire subject of the maintenance of equilibrium in its anatomic, physiologic and psychologic aspects, is too large for a single evening's session, but this brief reference to it is necessary to the further explanation of nystagmus. This evening the attention is to be concentrated on that part of the equilibrial reflex arc that includes the semicircular canals and the retina as the receptors, the cerebellum and other basal ganglia as the coordinating centers, and the ocular muscles as the peripheral apparatus.

As Dr. Ballenger will discuss the otologic side of the subject of nystagmus, I shall not refer further to the labyrinth in its relation to the function of equilibration, but outline briefly the anatomic basis within the nervous system which, as a part of the great reflex arc of equilibration, is involved in the production of nystagmus.

In the medulla are four nuclei from which the vestibular branch of the auditory nerve seems to take origin. They are known as the spinal vestibular nucleus, median vestibular, superior vestibular (nucleus of v. Bechterew) and lateral vestibular (nucleus of Deiter). These nuclei, of course, are the inner ends of the neurons whose outer ends are connected with the cristæ acusticæ within the ampullæ of the semicircular canals. From these nuclei other neurons pass to the cerebellar roof nucleus of the opposite side as the vestibulo-cerebellar tract. Others cross ventromedially in the tegmentum of the pons as arcuate fibers, bending upward and downward to reach other levels. Some serve as commissural fibers between the superior vestibular nuclei of both sides; some as fibers to the abducent nucleus; some as crossed and uncrossed strands to the posterior longitudinal fasciculi, by means of which the interconnection of the vestibular nerve with the third, fourth and sixth nerves is brought about; and finally, some as fibers to the spinal cord by way of the olivary bodies and lateral tracts, both of which are in connection with the spinal anterior horns. This rapid and superficial survey reveals the wide relationship of the vestibular nerve with many central and peripheral motor apparatuses. We here see at a glance that impulses from the cristæ of the semicircular canals, after passing through the vestibular nuclei of the medulla, reach the nuclei of the cerebellum and the cerebral cortex by both a direct and an indirect course, and that from these vestibular nuclei reflex impulses run by way of the medial fillet to the opposite nuclei of the motor cranial nerves, by way of the lateral and superior fillets to the quadrigeminal bodies, and by way of the olives and lateral columns of the cord to the anterior horn cells. The fact that concerns us more particularly to-night is that afferent impulses from so highly specialized an apparatus as the semicircular canals and efferent impulses to the muscular apparatus of the eyes are brought into the closest sort of relationship in the medullary vestibular nuclei and there subjected to the controlling influence of the cerebellum.

So important is the rôle of the cerebellum in the maintenance of equilibrium that a few words must be devoted to its anatomic connections and physiology. It receives and transmits afferent and efferent impulses from all parts of the body by way of its three peduncles. Its connections through the middle and superior peduncles are of special interest in the study of nystagmus. By the middle peduncles the cortex of the cerebellum is united to the nuclei of the pons and the opposite cerebellar hemisphere. The nuclei of the pons are in part the continuation of the gray matter which, in the medulla, is the origin of the motor nerves and the termination of the sensory. The pontine olive, for example, duplicates the lower or bulbar olive, receives impulses from the anterior nucleus of the acoustic nerve and reflects them on the nucleus of the sixth nerve. Moreover, these pontine nuclei are also in connection with the cerebral cortex of the frontal and temporal lobes.

By the superior peduncles the cerebellum is connected with the red nuclei, optic thalami and cerebral cortex.

The principal afferent paths of the cerebellum have been pretty thoroughly worked out. They are those related to the labyrinth and retina, to the cerebral cortex, and the peripheral organs concerned in the muscular sense. The efferent paths are less known. They include the fibers from the cerebellum to the posterior longitudinal fasciculi and thence to other centers, especially the ocular nuclei; and fibers to the cerebral cortex and the various centers in the mid-brain, pons, medulla and cord which subserve coordinate action of the ocular, skeletal and perhaps visceral muscles, as well as the great centers in the medulla such as the vagus, respiratory, vasomotor, etc.

As a general center the cerebellum has been shown to exercise the following functions in connection with the eyes and the labyrinth:

1. In bringing them together conceptually in the sphere of consciousness, with the aid of the cerebrum, and connecting them as parts of the great general apparatus of equilibration.
2. In controlling for the most part the movements of the muscles on the same side of the body.
3. In acting as a regulating reflex, through a wholly subconscious arc, in the maintenance of equilibrium.
4. In preserving the muscle tone so that the muscles are ever ready for instantaneous response to stimulation.

Enough has been said, I doubt not, to show the general constituent arrangement of the vestibulo-cerebello-ocular apparatus, which, in connection with certain tracts from the cerebral cortex and from the spinal cord, subserve the function of the maintenance of equilibrium.

Now comes the more difficult task of showing how the phenomenon of nystagmus is to be accounted for on the basis of this vestibulo-cerebello-ocular apparatus and the function of the maintenance of equilibrium. The difficulty of the task is more apparent than real, however. The theoretical explanations have been very largely confirmed by the elaborate and painstaking investigations of Barany, Byrne and others in recent years.

Theoretically, the oscillations of nystagmus represent a break in the alternate action of antagonistic muscles in their effort to restore equilibrium. If the cause of the break were on the efferent side of the equilibrational reflex arc, there would be more or less paralysis. There are no paralytic manifestations in connection with nystagmus and so we must look to the afferent side of the arc or to the coordinating center. The nature of the maladies in which nystagmus occurs lends strong support to this assertion. Troubles in which vision is affected, whether peripherally or centrally, injuries to the semicircular canals, cerebellar and pontine lesions, and degenerative diseases of the nervous system affecting its afferent paths are the ones prone to be accompanied by nystagmus. The spatial, coordinating apparatus being thus upset, inco-ordinate and more or less alternate and disconnected impulses are sent out to mutually antagonistic muscles of the eyes; an alternate action between them is set up; and the phenomenon is called nystagmus.

The alternate action of the pontine centers that cause the alternate spasm and relaxation of the mutually antagonistic muscles of the eyes is influenced by centripetal impulses from the retina, the semicircular canals and the conscious will. Inadequate control on the part of any one of these over the pontine centers, as in congenital eye defects, in labyrinthine disease, or even in volitional inefficiency, may easily be conceived as the cause of the breaking up of a nicely balanced contraction between normally opposed muscles and of starting them into an alternate clonic movement. With his usual philosophic insight Gowers says that "the manner in which nystagmus is produced by such varied disease suggests that its immediate pathologic mechanism must be some tendency inherent in the centers concerned. It is possible that these centers have a tendency to rhythmical or intermittent action which is normally counteracted, and that the counteracting influence is readily deranged." The recent work of Barany and his followers would seem to indicate that this counteracting influence originates very largely in the semicircular canals working in conjunction with the controlling and coordinating influence from the cerebellar nuclei and cerebral cortex. In other words nystagmus is potentially an effort to restore equilibrium, like the movements of the eyes in attempting to follow the telegraph poles from the window of a rapidly moving train, but due, unlike the latter, to a series of rapid, alternate, incoordinated impulses from within.

As neurologic symptoms nystagmus and pseudonystagmus are both valuable, but not as definite localizing signs in the absence of other associated signs. In the words of Grasset, "like all nervous symptoms which are always the expression of a disturbed function, nystagmus is a symptom of localization, though as yet the seat of the lesion cannot well be determined." It would seem to include the corpora quadrigemina, the optic thalami, the restiform bodies, the cerebellum and the labyrinth, all important structures in the functional maintenance of equilibrium. Both nystagmus and pseudonystagmus are found in a large number of functional, so-called, and organic maladies of the nervous system. Even normal individuals have exhibited nystagmoid movements of the eyes.

It is of some clinical importance to distinguish the true from the pseudonystagmus. For example it is pseudonystagmus that is almost constantly observed as one of the important symptoms of hereditary (Friedreich's) ataxia; and it is pseudonystagmus which is seen in 46 per cent. (Uhthoff) of the cases of multiple sclerosis, the true nystagmus noted in this disease occurring in only about 12 per cent. of cases.

It is usually a pseudonystagmus that is supposed to be so frequent in nervous diseases and is seen in such varied conditions as meningitis, meningeal hemorrhage, thrombosis of the sinuses, hemorrhage and softening of the brain, intracranial tumors, especially of the cerebellum, and disease of the pons.

As Uhthoff has shown, true nystagmus is very rare in diseases of the nervous system, occurring in only three out of 500 unselected cases. It is never seen in paralysis agitans and in only 1 per cent. of tabes. Among nervous diseases it is only in multiple sclerosis and syringomyelia that a true nystagmus is seen with any degree of frequency and even in these it is rare enough. A true nystagmus, not dependent on optical defect, nor congenital in origin, not due to occupation or ear disease, is all but positively indicative of disseminated sclerosis or syringomyelia.

Nystagmus of a transitory character has been seen in hysteria, spasmus nutans and traumatism. It has been observed in the course of uremic convulsions and during the exhaustion of status epilepticus. It is significant that when it occurs in early life and when it appears gradually in later life it usually accompanies those maladies of the nervous system that are degenerative in nature. In the former it may be that the central nervous system has failed to develop to its highest possibility its coordinating function, whereas in the latter the high development of this delicate and complicated apparatus has been damaged somewhat by the inroads of disease.

Byrne has recently declared that "it is possible to differentiate nystagmus of central cerebellar origin from that originating in labyrinthine disturbances, without the aid afforded by the other well known symptoms. The nystagmus of cerebellar origin is distinctively different from labyrinthine nystagmus. The latter has always a fast and a slow element and the movements are executed about a definite axis of the eyeball corresponding to rotations and movements in fixed and definite planes. In cerebellar nystagmus, on the other hand, the movements of the eyeball are prone to be more irregular and do not occur about any axis of the eyeball. They resemble more nearly oscillations back and forth that are irregular or are circumduction movements of the eyeball as a whole. There is an irregular incoordinated action of all or part of the muscles, but no set of opponents work together in such a way that the movements could be said to have a regular fixed direction as in true nystagmus. Moreover, voluntarily turning the eyes in a certain direction does not inhibit the movements as in labyrinthine nystagmus, though it may diminish them to some extent or develop abnormal movements." As Byrne well notes, some cases of cerebellar disease, due in part to irritation and in part to destruction, may exhibit a labyrinthine or true

nystagnus rather than a pseudonystagnus, but even here there would always be some element that would be atypical for labyrinthine nystagnus.

The following conclusions may be allowed from the preceding:

Nystagnus is a peculiar oscillatory movement of the eyes, dependent on disturbance within a central coordinating apparatus, and representing an effort on the part of such apparatus to restore the function of equilibration as it relates to the ocular muscles. Two forms of nystagnus are observed. They are easily differentiated. Both forms show implication of the great reflex function of the maintenance of equilibrium. True nystagnus, which is comparatively rare, is more directly due to implication of the semicircular canals. Pseudonystagnus, which is far more common and is seen in a great variety of nervous diseases, probably represents a more remote implication of the semicircular canals, if at all, though it probably always involves more or less the general sensory-motor arc that subserves the maintenance of equilibrium.

Columbus Memorial Building.

ACUTE INFLAMMATION OF THE THYROID GLAND *

OTTO J. STEIN, M.D.

CHICAGO

* It has recently been noted by writers on this subject that investigation of the literature shows that very scant recognition has been given to acute thyroid inflammation, and especially by those in our specialty. It has been my experience that the laryngologist has a special opportunity to observe such cases. The almost barrenness of our literature on this matter attests to its comparative infrequency, but the subject is of absorbing interest because of the seriousness of many of these disorders and also owing to the difficulty in diagnosis.

An acute inflammation of the thyroid may take place in a gland perfectly normal, or in an enlarged or goitrous one. To distinguish the two, some writers designate the former as thyroiditis and the latter as strumitis. All or only a part of the gland may be involved in the inflammatory process. An accessory or an aberrant gland may be inflamed without the main or parent gland being particularly affected.

From the cases reported in the literature, it appears that the thyroid of the female is more frequently involved. It may occur at any age of life, although the greater number appear between the twentieth and fortieth year. It has been reported as occurring at times as an endemic. W. S. Robertson states that in Switzerland it is recorded as occurring as an endemic in school children and in France in a military garrison. It most usually takes place in an existing large gland and at times occurs in the course of pneumonia, influenza, eruptive diseases of childhood, typhoid, diphtheria, erysipelas, mumps, malaria, rheumatism, tonsillitis.

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

lues and tuberculosis. It also has occurred after injury or operation on the neck. Such a case was reported to me by a colleague as following a laryngectomy and it terminated in death from the acute thyroidism. Lubbinski believes iodine may be a cause, although this is denied by Goldberger. De Quervain also believes in an iodothyroiditis, because he speaks of a bacterial and toxic variety.

The inflammation may terminate in resolution or go on to suppuration. In the latter the disease always assumes a more serious aspect; 60 per cent. suppurate, and of these 20 per cent. die (Lebert). A simple inflammation is only rarely fatal; while the suppurative variety is always serious and, as stated, quite often terminates in death. This is due to the prolonged sepsis and the occurrence of pus finding its way under the deep cervical fascia into the mediastinum, or by opening into the air or food tract. Should gangrene arise, which seems to be rare, it is always fatal. If the abscess formation tends to the surface, it is more easily evacuated and the disease assumes a less serious nature. Being a ductless gland the avenues of infection presumably are the blood- and lymph-streams. The nature of the microorganism is usually identical with that of the associated disease.

Robertson, in a collection of ninety-six cases, found that in forty-one suppuration resulted, and these occurred only in the pneumonia, puerperal, typhoid, diphtheria and erysipelas cases. Bahri reports a case of suppuration following influenza and Bauer one following scarlet fever, while one of my cases followed tonsillitis with a rheumatic history. Collét relates a case in an infant aged 18 months, following pertussis, the pus containing streptococci. Hager cites an acute non-suppurative thyroiditis of his own observation in connection with a duodenal ulcer. Typhoid appears by far the greatest etiologic consideration. McArthur states that out of seventy-three cases of thyroiditis, forty were typhoid complications. Trauma is also a causative factor, as the infection following the hypodermatic treatment of the enlarged gland.

The symptoms of an acute inflammation of the thyroid gland will vary somewhat with the absence or presence of pus. Both varieties have the usual symptoms of an ordinary febrile disease, like chilliness, high temperature, dry and hot skin, anorexia, constipation, at times nausea and vomiting and perhaps some headache.

These symptoms occurring as they do frequently during or at the termination of one of the associated diseases mentioned above, may lead to the belief of a recurrence of that particular disease. But when the following focal symptoms begin to appear suspicion should be aroused. Pain in the neck in or around the region of the gland, at times radiating towards the ears and the scalp back of the ears from pressure on the auricularis magnus nerve; pain on swallowing; the swelling in the front of the neck becoming noticeably increased in size so that movements of the neck are painful and to obviate which the head is usually held stiff with the chin down to relieve the tension; the pressure inward on the larynx and trachea may cause huskiness and even aphonia, cough and possibly blood-stained sputum, owing to a passive congestion and edema.

A pressure on the esophagus may even cause actual difficulty in swallowing aside from the pain incident to the inflammation of the neck. This is also the cause for the thirst. Vomiting with a slow pulse may be present from pressure on the vagus nerve. Sometimes a partial ptosis and corneal anesthesia are present from sympathetic nerve pressure. Atrophy of the remaining gland after a suppurative process has been reported as causing cretinism.

The diagnosis, particularly in the suppurative variety, may be difficult. A beginning thyroiditis may be confounded with any simple parenchymatous or colloid enlargement such as is frequently met with in girls at puberty or during menstruation or pregnancy, especially with an incidental occurrence of sore throat.

A case of Ludwig's angina seen by me resembled very much a suppurative thyroiditis, but the involvement of the tissue of the floor of the mouth in this patient determined the correct diagnosis, just as the absence of involvement of this area turned the evidence toward suppurative thyroiditis in another patient of mine.

Cervical adenitis accompanied by cellulitis has many characteristics of thyroiditis. Mumps and esophageal abscesses are mentioned by McArthur as simulating this disorder.

Thyroglossal and branchial cysts resemble somewhat this condition. I operated on such a cyst in a young boy in which there was fever, severe pain in the neck, great swelling in the mid-line, redness of the skin, fluctuation, rigidity of the head and difficulty in swallowing. On opening, nothing but a quantity of mucoid fluid was found within the cyst wall and on forcible injection of the cavity the fluid injected found its way along the patent duct to the foramen cecum at the root of the tongue. A second case was a lady, aged 31, complaining of chronic sore throat. She gave a history of having had a swelling over the larynx that was red and painful and accompanied by fever. The swelling was incised at that time, a year before, and a large quantity of pus escaped. A small scar in the median line now remained. The right faucial tonsil showed pus escaping from numerous crypts. The tonsils were not acutely inflamed, but buried and diseased. I removed them by dissection. Six months later she again consulted me regarding a swelling in the region of the old scar. It gradually increased and became very painful on swallowing and otherwise. The scar finally opened and a purulent discharge continued from the fistula for some months.

Disease of the submaxillary and sublingual salivary glands, especially with calculi, accompanied by infection and pus, may bring the diagnosis into question. Ranula is another one of those conditions which may have to be considered if the ranula is very large, but both of these affections always show marked involvement of the floor of the mouth, especially on palpation.

Quincke's disease, or as more correctly known, angioneurotic edema of the throat, may be present as a symptom of the thyroiditis, and thus exaggerate conditions. Kyle refers to the high leukocyte count in this neurosis and considers it an aid in differential diagnosis. In this con-

nection it may be mentioned that Jeanselme has noted a marked increase in coagulability of the blood in cases of thyroiditis.

Hemorrhage into the gland had been recorded a few times and may simulate a sudden attack of thyroiditis. Bruening, in reporting such a case which resulted following the firing of a gun, refers to six other cases reported in the literature. Champion and Aldridge also report an interesting case that died within one and one-half hours following a fall from a tram-car. Dr. Cubbins, of Chicago, related a case to me of acute hemorrhage in the gland that recovered after operation.

A gumma of the gland may take on sudden activity and provoke some acute symptoms such as severe dyspnea, edema of the larynx, hoarseness and dysphagia, but this is the exception, judging from the few cases reported in the literature, about twenty in all.

Chondritis and perichondritis of the various causes like typhoid, lues and tuberculosis may have to be considered but other evidences of these diseases are usually so apparent that a differential diagnosis is not difficult.

A typical case of acute inflammation without suppuration that came to me was that of a young girl aged 15 years. Very suddenly and without any known cause the thyroid gland enlarged and as it rapidly increased in size it produced pressure symptoms, such as difficulty in swallowing, local pain, a huskiness (due to a mild edema of the intralaryngeal membrane seen on laryngoscopic inspection) that necessitated a "clearing of the throat." Associated with these were the usual symptoms of infection, such as chilliness, hot and dry skin, anorexia, constipation and headache. The temperature went as high as 102 F. and then gradually receded. The area of thyroid swelling increased, the overlying skin was red, glazed and very painful. The pressure symptoms increased so much as to interfere very disagreeably with swallowing, breathing and the voice. There was no vocal paralysis or stenosis from compression, only edema. General nervous symptoms were present such as fear, restlessness, accelerated pulse and respiration. Ice and kaolin paste were employed locally and after ten days she was well.

Another patient of mine, one of the suppurative variety, presented several interesting features. She was a young lady twenty-six years of age, with the following history.

She had been under the care of several physicians, two of them throat specialists, and also an osteopath, for eight weeks, but her trouble became progressively worse, suffering much and being greatly discouraged. At the beginning a swelling developed in the neck, slightly to the left of the mid-line between larynx and chin. It appeared rather suddenly and continued to increase. It remained circumscribed to this area and was painful. The trouble commenced with acute symptoms, like fever, a mild tonsillitis, soreness and stiffness of the neck; hoarseness of the voice being an early symptom. The dysphagia developed only in the last week or so. Owing to symptoms, referred to by the patient as rheumatic, most all of her physicians had been treating her for rheumatic laryngitis. There was no dyspnea or cough.

My examination revealed the features of a woman in much distress. There was evidence of much pain and in order to minimize this she held her head rigid. The pain even then was constant but became worse on swallowing and even talking and it radiated at such times toward and into the ears.

The anterior part of the neck was much swollen so that there was a straight line from chin to sternal notch. The skin was tense and somewhat glazed, the underlying tissue hard and painful and no evidence of softening could be deter-

mined. The temperature was 100 F. The oro-pharynx showed nothing abnormal. The base of the tongue and epiglottis appeared normal. The interior of the larynx was not inflamed although both ventricular bands were very much swollen, the vocal cords themselves being clean, white and freely movable. The floor of the mouth on palpation and otherwise, showed no involvement of the salivary or mucous glands in this region.

On the following day the patient was operated upon at the hospital by a transverse incision made over the region of the hyoid membrane. This site was selected because the onset of the swelling seems to have developed in this region; because of the swelling of tissue in the supraglottic region and not below, and finally, at the time of the operation, I found slight softening at this place, which was not made out the day before. Pus was encountered in considerable quantities undermining the tissues all about and very deeply. A curet was used for the purpose of securing some tissue for examination and this showed with the microscope evidence of thyroid tissue. The pus contained streptococci. A gauze drain was used for several days and a large quantity of pus continued to drain, but all other symptoms immediately improved so that ten days later the patient was discharged healed and well and has remained so now six months. I believe this to have been a case of thyroid inflammation first involving the pyramidal lobe.

I have seen this disease develop following influenza and tonsillitis but only exceptionally does the process go on to suppuration.

In one case an acute suppurative process developed, the result of direct injury. A boy riding a bicycle carrying over his shoulder the frame of another wheel; he fell from his wheel, the frame of the one he was carrying struck him in the neck over the gland, a severe edema of the glottis shortly followed which was relieved by local measures. The same evening, the gland began to swell and enlarge, became very painful and a temperature of 104 F. developed, with chills. All the local symptoms increased and on the seventh day an incision low down in the neck had to be made, and a small amount of pus escaped. After this his recovery was rapid.

The intralaryngeal and tracheal changes in the various affections of the thyroid gland are always of great interest and especially to laryngologists, but in the particular variety of thyroid disease under discussion the changes within this tract are not so numerous. Personally, I have never seen or authentically heard of cord paralysis as a result of thyroiditis, although hoarseness and even aphonia and dyspnea are frequently present, but they are due to the venous congestion and edema, the edema being usually in the supra- or infraglottic region, but not of the cords. Compression of the trachea is likewise not reported in this class of cases, while cough, "clearing of the throat," blood-stained sputum and laryngeal spasms are present in some cases.

32 North State Street.

DISCUSSION

Dr. Joseph Beck: I do not know whether Dr. Stein meant primary infection of the thyroid gland or general. I think Dr. Stein has presented an array of cases that do not fall to the average laryngologist. I wish to report a case that afforded a considerable amount of difficulty in handling. It was a case of secondary thyroiditis, following peritonsillar abscess, in which the peritonsillar abscess had passed along the anterior pillar and extended along the neck. The patient was a man aged 65 years. He was brought in from the Poor House to the Cook County Hospital for emergency work and he was distressed for breathing. I found a large swelling over the thyroid and the doctor from Dunning told him of his large thyroid before he had a peritonsillar abscess and they contemplated the removal of it.

In other words, this was an infection following a peritonsillar abscess, directly extending into the hypertrophied gland, or an ordinary goiter, and the man was now suffering from pressure on the trachea. The swelling extended away up to the hyoid bone and down to the sternum, and there was no place I could think of to do a tracheotomy without going through the thyroid gland tissue itself. His temperature was very high. I thought of relieving him by intubation, but he could not tolerate the tube and it was necessary to operate on him under a local anesthetic. I opened and found that within the gland there was not a distinct abscess, but infected thyroid tissue. I removed a piece for subsequent examination which proved to be an infection of the intercolloidal tissue. Here was a case of peritonsillar abscess neglected which probably caused this infection of the thyroid which extended along the neck.

I was forced to do this tracheotomy, with very gratifying results, however. The old man lived, but I do not know that he is any particular good to himself or any one, as he went back to Dunning. He is still alive and I have seen him several times since, now several months since the operation.

ANTERIOR POLIOMYELITIS *

J. H. BACON, M.D.

PEORIA, ILL.

The past few years have recorded a most wonderful advance in our knowledge of diseases of protozoan origin. Their importance is just dawning on the medical fraternity of this country and compromised among the newer ones are the hook-worm disease, mountain fever, pellagra and infantile paralysis.

The past of infantile paralysis, Heine-Medin disease or poliomyelitis is a record of death and deformity. The present, whose every moment is pregnant with new discovery, finds the same devouring Moloch holding sway. The future is rosy with the hope that medical science will soon add another to her increasing list of preventable diseases.

Our hopes must lie in prevention and complete eradication, for this disease is so difficult of early diagnosis, except in epidemic forms, that the majority of cases will not be recognized until the paralysis makes the diagnosis positive. No matter how efficient a remedial agent may be, sufficient time for it to act must elapse before the damage is done to be of benefit to that particular patient. It is this difficulty of early diagnosis and its continued endemic prevalence that make further consideration fitting at this time, although our knowledge is still fragmentary. In Illinois there were reported in 1910, 215 cases with seventy-seven deaths, and twenty-three deaths for the first half of 1911. These of course do not comprise nearly all, as it is not compulsory to notify and quarantine in this state.

Any authoritative discussion of this subject to-day must contain frequent quotations from Wickman, Landsteiner and Levidati, and in this country to Simon Flexner and his coworkers at the Rockefeller Institute. I feel sure that the monograph they issue next month will be

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

as epoch-making as their previous efforts. On account of the so very extensive recent literature Poppin has been able to make a summary of 150 papers.

I will not detain you with a long dissertation about the more generally recognized symptomatology of the spinal form. After a general discussion of some of the more recent additions to our knowledge gleaned largely from experimentation on monkeys, I will direct your attention to some of the less frequent, although well recognized, forms of the diseases that have occurred in my experience, citing a few instructive cases of my own and others, and finally close with a plea for registration and quarantine.

Etiology.—The virus is individually so minute that it will quickly pass through the finest porous filter and so far has not been recognized microscopically, although it is more than probable that it is just visible. These characteristics among others indicate that it belongs to the lowest form of protozoan life. The virus will retain its activity after nearly two months of freezing and is very resistant to desiccation. Formaldehyd in 2 per cent. solution or quinin in large doses injected at the same time with the virus do not diminish its activity. Salvarsan injected both at and following inoculation does not protect. It is easily destroyed by heating or by 1 per cent. solution of hydrogen peroxid or menthol or 1/1,000 potassium permanganate. The disease as inoculated in monkeys is much more severe than in man, being nearly always fatal; however, it produces similar symptoms and the same lesions. Paralysis usually develops about eight days after inoculation, but varies from three to thirty. Recently the ability to inoculate guinea-pigs has been gained. One might expect the period of incubation in man then would be eight to ten days.

Pathology.—We have changed our ideas of the pathology in the last two years and now consider this among the general infections. It seems that the beginning process after the virus breaks through the outside barrier of skin and mucous membrane and gains entrance to the central nervous system is a dilatation of the blood-vessels with a resulting hyperemia of the brain, meninges and of the cord at all levels. Then follows a perivascular infiltration of the lymph-vessels with lymphocytes and edema of the surrounding tissues, resulting in a degeneration of the motor ganglion cells of the anterior horns and a lower neuron paralysis. As the hyperemia and edema diminish the ganglion cells least affected recover, the others become necrotic and the muscles they innervate become flabby and atrophy. Finally contractures of the opposing muscles develop.

Outside the central nervous system parenchymatous degenerations of the liver and kidneys and heart are usually found, sometimes with focal necrosis and groups of leukocytes. There is an acute inflammation of the entire lymphatic tissues of the body as well as the spleen and tonsils, with a partial destruction of the lymphocytes. A pharyngitis and bronchopneumonia may be present. The brunt is borne by the motor ganglion cells of the anterior horn in the brachial and lumbar enlargements.

Pathology of Cerebrospinal Fluid.—Before the paralysis develops, there is an increase of cells, that is, above 10 per c.mm. in the spinal fluid, which is under normal or slightly increased pressure and somewhat increased in quantity. These cells, according to six cases in the prodromal stage examined by Draper and Peabody, are chiefly polymorphonuclears. The fluid is usually clear or opalescent, and Noguchi's globulin test usually shows a normal amount.

After the paralysis has developed the lymphocytes predominate and may comprise the cell picture. Noguchi's test shows a gradually increasing amount of globulin as time elapses. Fehling's solution is reduced both prior to and after the paralysis. Fibrin clot may be present after standing a few hours. The blood picture contains nothing distinctive from other infections, unless it is a relative diminution of lymphocytes. There is a leukocytosis reaching as high as 30,000.

Portal of Entry.—The pioneer work of Flexner and Lewis, confirmed by numerous other investigators, leaves no doubt that the nasal mucosa may at least be one of the ways by which the infecting organism gains entrance. Recently Kling, Weinsted and Petterson have demonstrated the virus in washings of the sigmoid both in life and post mortem and have reported twelve positive out of thirteen inoculation experiments. Other experiments have found the virus in the lymphoid tissue, in the spinal fluid before paralysis and in the brain and cord after paralysis had developed. It has been found in the dust of rooms during the disease in virulent form and also weeks afterward. It has been demonstrated by inoculation experiments in the bodies of flies that had been fed on affected cords. Feeding experiments are positive in monkeys when the bowels are locked by opium. This makes the digestive tract a possible portal of entry also. We now know that the virus is present in excretions of the respiratory and digestive tracts no matter how the virus is inoculated. It is also present in the dust of rooms and in the bodies of flies; but does the virus usually gain entrance by these simple routes? It would seem not when we consider that two cases rarely develop in the same house, although the children play, eat and sleep together; that there are no reported epidemics among susceptible laboratory animals, although the sick and the well are caged together. In fact, it is rather difficult to get positive inoculation unless all conditions are perfect. This might show that there was either a relatively high immunity among most individuals or a great variability in the virulence of the virus; or further, there might be an intermediary host or insect carrier that was not always present. Flexner states that there is a variability of virulence that is demonstrated by inoculation experiments. Such a condition might be due to different stages in a life history yet to be determined, similar to those recognized in many other of the lower forms of animal life. In most diseases of protozoan etiology their propagation is closely connected in some stage with either an intermediary host or an insect carrier. Malaria has its anopheles, yellow fever its stegomia, sleeping sickness the tsetse fly, mountain fever the tick and pellagra the gnat, and by analogy we might infer that some insect carried this virus

from one patient to another acting both as intermediate host and carrier. This might even be true and yet have the positive inoculation experiments, although that seemingly militates against it.

Diagnosis.—The diagnosis after the atrophic paralysis is very easy even in the endemic form, but in the onset, when there are no distinctive features from any other infections, it is nearly impossible; as an example, in all of my cases there has been a marked hyperesthesia with backache and headache over the occiput. The same, however, is true of the onset of small-pox, so it is not at all distinctive, unless in an epidemic, when it would be suggestive at least. Since the inoculation experiments have shown that there are numerous different meningeal and cerebral forms as well as the common spinal type the diagnosis is still more difficult and leads to the danger that many obscure acute meningeal and cerebral cases will be wrongly diagnosed.

Immunity.—On account of the epidemics of this disease occurring so recently and the ability to successfully inoculate the disease and perpetuate it in the laboratory at will being acquired still more recently, most of the problems of immunity are yet to be worked out. Most of our interest, as well as knowledge, have developed since the Swedish epidemic. So far investigators have worked with material containing the virus, and not with a pure culture, no one having been able to grow it artificially. It does seem probable that one will develop a strong immunity, and so far one attack rendered immune all monkeys from repeated inoculation. Serums from cured individuals ought then not only to be protective, but curative. Such seems to be the case to some degree, where tried, but has yet to be more thoroughly investigated. However, in man there have been reported a few authentic cases of what apparently seems to be a second attack.

Treatment.—No new methods of treatment have been brought forward recently. Hexamethylenamin has been suggested and tried because it is secreted as formaldehyd in the cerebrospinal fluid, yet formaldehyd is strongly resisted by the virus. However, Flexner reports that it delays the onset and causes a less severe attack in monkeys, but in no way affects the severity after the onset of the disease. The use of a hydrogen peroxid spray would seem a very rational procedure, as a 1 per cent. solution rapidly destroys the virus. On account of the short course of the disease, one would be led to believe that immunity is established early so if some drug could be found that would inhibit the reproduction of the infecting organism for only a few days Nature then would hold the whip hand. As this disease resembles rabies in animals it has been suggested that graduated injection of a cord attenuated by desiccation as in the Pasteur treatment would also bring about an immunity, but in rabies we have a disease following a definite type of injury with a long incubation period. In poliomyelitis we have no means at present of detecting the initial lesion where invasion takes place; then we have a disease with a probable incubation of eight days as against nearly a month in rabies. Such active immunities are usually slow of development, but

of longer duration. They might be of great benefit to an affected community if given to large numbers early. But it is difficult to enforce such police powers that interfere with the personnel of the individual, unless the vaccination be mild, without harm and conveys a lasting immunity, before a sufficient number would submit to make it practical. After the onset we are more liable to get real benefit to the individual from a serum that would act immediately after injection, but this must be done before the paralysis, as that marks the culmination. At present we must depend largely on careful nursing, mechanical therapeutics and the effect of certain drugs to meet symptoms as they arise and maintain a general attitude of watchful expectancy, protecting the rest of the family with hexamethylenamin and nasal douches of 1 per cent. hydrogen peroxid and alkaline gargles.

There is one procedure that has but recently been perfected and that is the insufflation method for artificial respiration when paralysis of respiration develops. Heretofore such patients have died when the available oxygen has been exhausted and those in attendance tired out. With this method available it will be possible to maintain respiration for days if necessary, giving the hyperemia and edema of the respiratory center time to abate in hope that respiration will again be resumed. Knowing that the crisis is past and judging from the improvement that takes place in the condition of the cord we have a right to assume that such improvement will also take place in the medulla.

Classification.—We cannot do better to-day than to accept the classification of Wickman. He divides this disease into eight types; these are not always clinical entities, but gradate into each other.

1. Spinal form. This comprises probably from 60 to 80 per cent. of the cases.

2. Ascending form, which resembles Landry paralysis if it is not identical with it. It is progressive in type and may be either ascending or descending.

3. Bulbar or pontine form, which involves the cranial nerves and may also include the spinal form.

4. The cerebral or encephalic form.

5. Ataxic form, which involves the cerebellum.

6. Polyneuritic form. This form is frequently diagnosed as rheumatism.

7. Meningitic form. This frequently resembles epidemic cerebral meningitis, and may also be hard to distinguish from tuberculosis.

8. Abortive type. This does not leave any paralysis remaining after a few weeks.

I will give you examples of the Landry type, the cerebral type and the abortive type.

Landry's Type in an Adult. Case 1

Clarence F., aged 23 years. Family History: father nervous; one sister bright and normal; other has speech defect and retarded growth.

Personal History: Very nervous disposition. Infection of foot a year ago. No recent injury. In western Virginia for six weeks in farming districts till

one week ago. Has had a tired feeling in back which he laid to his occupation and frequent change of bed. Complained of this but otherwise felt well and ate heartily. Been smoking freely last few days. Has been worried over financial matters recently.

Present Illness:—On Sept. 9, 1910, had pain in back over tenth rib of right side and consulted a doctor who diagnosed it intercostal neuralgia. Was relieved quickly by phenacetin, and went to a dance next day and felt very well. October 2, although not feeling well went to the house of a friend for evening meal and ate heartily of salmon salad, of which several ate, but the others felt no bad effects. Brought home sick about 9:15 p. m. Went to bed but could not sleep as he was too restless. I was called at 1 a. m., October 3. Found a well-nourished young man lying in bed. He was very restless and did not lie in one position long. Color normal. Temperature, 101; pulse, 90; respiration, 22. Head examination negative. Neck and back normal except sore over four last ribs on right. No tender spots along the spine, or along intercostal nerves. Lungs and heart normal. Sore over ascending colon and at pit of stomach. Reflexes all over body exaggerated. Vomited during the examination. Vomitus contained evening meal, considerable fruit and salmon. No blood; sour. Seemed easier and said he felt relieved. Cold compress to head. Hot water bag to abdomen and back. Soda bicarbonate and charcoal.

9 a. m. Had vomited since last visit and was still nauseated. No soreness on pressure over McBurney's point. Throat felt sore; slight redness of pharyngeal mucosa; no exudate. Head and back still aching but some easier than on first visit. Still worried about some personal matter. Given mercury biniodid, gr. 1/8. Temperature, pulse and respiration same as in morning.

7 p. m. Had sat up in chair most of day and was restless, but wanted to sleep. Back still annoying him considerably and slightly sore to pressure. No vomiting, no bowel movement. Given Hincle pill and heroin, gr. 1/12.

Tuesday, October 4, 9 a. m. Had slept well until 1 a. m. Afterward was restless and tossed. Slept some in the morning. Some nausea. Ate some. Abdomen clear. Backache slight. Still restless and heavy feeling in back of head. Throat normal. Salts: acetyl sal., gr. 5 q. 4 hours.

7 p. m. Still weak and nervous. Been up in chair part of day. Bowels moved at 5 p. m., large and well formed. Walked to toilet. Head ached when moved, but better. Family thought further visits not necessary. Given strychnia 1/60 gr. and quinin, gr. 15.

Wednesday, October 5, 6:30 a. m., Called back. Slept well until 11 p. m. Had to be helped to bath room, as he could not use legs, although he could move them some. Father told him he was a baby and not to give up. But still he had to be helped. He went to sleep which lasted until 1 a. m. Wednesday morning, afterward restless, moving from one side of the bed to other with help. Complained of pain in back of head. Used hands all right. Wanted to go to a wedding that evening. Very much worried about it. I found him rolling from one side of bed to other. Hardly getting settled before asking to have his legs moved. He complained that he could not use himself, and that he was very weak. Had an anxious expression. Could use hands but with less power. Could not use legs at all when taken to jar, and they dangled limp. When placed in bed he could rotate legs slightly and extend toes. His reflexes were all present. Those above the waist line were exaggerated. Breathing was becoming somewhat difficult. Could roll over in bed but had to have some one move legs which were limp. Fibrillary twitching in all muscles above waist. Kernig absent, also Babinski. Gradually reflexes above waist become more marked. Temperature, 98.6; pulse, 95; respiration, 25.

8 a. m. Temperature 98.6. Muscles above the waist becoming rigid. Sensations were everywhere present. Dyspnea becoming more marked and cyanosis developing. Sweating over face and chest profuse, rather clammy. Complained of being tired and that breathing was difficult. Chest oppressed. Headache severe. Was very nervous. Very anxious expression on face. Mental tension

extreme. Kernig's sign still absent. Transient strabismus. Could see and hear normally. Swallowed water, which he frequently called for. No nausea. Mind clear and active. Pulse becoming more rapid. Rate between 100 and 90. First consultant saw him at this time and thought first it was strychnin poisoning and then changed to belief that it was tetanus, although no history of any injury was obtained or wound found on examination. Was given 10 grains of veronal and 20 grains bromids in two doses by mouth. He could drink and take nourishment and talk but his voice was husky. He talked some in answer to questions mostly, but with difficulty. Cried and said he was so nervous and unless he was given something would go crazy.

9:30 a. m. Room was kept quiet. Seemed a little quieter for a few minutes at a time. Sedatives were given a chance to act but having no marked effect he was given chloroform and he dropped into a dose only to awaken when it was removed. The chest was held rigid. The respiration became very shallow and labored. Speech became more difficult. The legs gradually became rigid.

10 a. m. Chloroform was given intermittently with some relief. I telephoned for oxygen as complete paralysis of respiration seemed imminent at any time.

11 a. m. Was placed in hot pack for ten minutes and he became very cyanotic and it was discontinued. Respiratory movements were so poor that they were reinforced artificially. Suddenly they ceased altogether at 11:20. Temperature, 98.6. Risus sardonius intermittent. Could talk with difficulty and able to drink. Conscious. Pupils normal and reacted normally. Neck stiff. Head ached; cyanotic. Abdomen contracted in expiration.

12 noon. Spinal puncture of 35 c.c. of clear fluid under normal pressure. No pus cells. No bacteria. Slight fibrin clot after 24 hours. Few mononuclears. White count, 14,000. Patient grew steadily worse. Cyanosis increased in spite of artificial respiration and oxygen. Conscious to end, and swallowed water although it sometimes did not go down. Mouth slightly open. Made movements for us to continue if we left off our endeavor. Died at 3:30 p. m., heart dilating.

Abortive Cases.—From the laboratory has come the confirmation of the reports of the clinicians of an abortive type of the disease leaving no paralysis. When one considers there are numerous abortive cases which are never diagnosed and are privileged to run at large unrestricted, the missing link of the apparently isolated case can readily be imagined. The following is a suggestive case history at least, though some may question my diagnosis. And I might add here that recently a means for the after-diagnosis of these cases that will nicely clear the situation has become available. The serum from such cases will materially protect monkeys at time of inoculation.

Case 2.—C. D. Family history negative. Personal history: Never had serious sickness; nervous for last two years; constipated. Present illness: I was called on July 14, 1911, about noon to see a telephone operator. October 23. Found a well-nourished young woman in bed complaining of severe aching in back and upper half of abdomen, also severe headache. She gave a history of not being well for three days previously and had been having similar pains the day before only not so severe. The day previously she had taken to bed about noon. During the forenoon she had vomited.

Afternoon. Patient extremely nervous. Mind clear. Skin clear. Face flushed. Pupils reacted normally. Slight reddening of pharynx but throat not sore. Slight stiffness of neck. Patient complains if neck is bent. Heart and lungs negative. Indefinite soreness on pressure of abdomen especially on upper right quadrant which seems slightly tense. Able to move hands and feet but complains of stiffness of right leg. Reflexes exaggerated. Right knee kicks higher than left. Bowels moved during morning. Temperature, 101; pulse, 90; respiration, 24. Urinalysis: specific gravity, 1.017; clear, acid, trace of albumin; no casts, blood

ci pus. Gave hexamethylenamin, 10 grains every 4 hours; aspirin, 5 grains every 3 hours. Sponge bath and hot water bag to the abdomen.

5 p. m. Patient's condition remains about same except she cannot walk. She is able to move right leg with difficulty. Leukocyte count, 11,000; temperature, 102; respiration, 24; pulse, 110. Reflexes exaggerated. Kernig's, negative.

9:50 p. m. Only apparent change in patient's condition is movements of right leg are performed more readily. Temperature, 104.4; pulse, 120; respiration, 26.

Consultation at 11:30 p. m. with Dr. S. M. Miller. No definite abdominal condition was found to explain pain and tenderness. Possibility of appendicitis was discussed but location of pain rather high and quite variable. A kidney lesion seemed possible, but the lack of blood, pus, and casts in urine, also no previous history of kidney trouble, were against this. A ruptured duodenal ulcer might cause a similar condition, but no previous history of stomach trouble also bore against this, but not ruling it out entirely. Similarly hemorrhagic pancreatitis and empyema of the gall-bladder had to be considered. Fleuris and diaphragmatic pneumonia sometimes are the cause of pain in the upper abdomen but were ruled out here on account of having no physical fluid findings in chest to support this view. No special pain or respiratory movements and low respiratory rate. While not having the spinal fluid to help in making the diagnosis, yet the apparently developing paralysis of the right leg seemed to make the diagnosis of infantile paralysis the more probable one.

July 15. Patient's temperature and pulse are normal, there is still some soreness in back and on movement of right leg. The leg movements are normal except extension of feet and knees are weak.

July 16. Patient seems about normal, able to be up and around and walk apparently quite normally.

Status Præsens: The right leg readily goes to sleep in sitting posture. Seems as strong as before attack. The patient states that she was never bothered with trouble like this before attack.

Cerebral Forms of Poliomyelitis: "Koplik." Case 3

L. D., male, aged 5 years. Has had rachitis, scarlet fever and diphtheria. Three years ago had scarlet fever and diphtheria. Tonsils have been removed.

Family history negative. Five weeks before admission to hospital, was taken with high fever, headache and prostration. The fever apathy continued for two weeks, during which time the child vomited frequently. The fever then ran a lower course, and the child became somewhat brighter but complained of severe headache, vomited occasionally, and was constipated. The patient complained of pain in the right eye and right hand. There have been no convulsions. The child is quiet but parents think it does not sleep. There is sighing respiration.

Status Præsens. The patient is soporose, although he answers questions. There is a slight rigidity of the neck, and a tendency to yawn. There is some hydrocephalus on the right side. The reflexes are exaggerated. The pulse is equal, regular: no paralysis noted of any kind. There is slight neck rigidity, tache cérébrale, signs of hydrocephalus on both sides, later on abdomen retracted, a constant tendency to yawn, left internal strabismus, patient soporose but conscious when aroused, no evident paralysis. A lumbar puncture yielded 30 c.c. of clear fluid under some pressure. A day subsequent to admission the patient was brighter. An examination of the fundus oculi revealed some small retinal hemorrhages suggesting compression of the cerebral retinal arteries, but no choked disk.

Five days after admission, patient was conscious with the above ocular palsy, but interested in surroundings. Some exaggerated knee-jerk. On walking, patient shows some tremors. Complains of headache, is apathetic, pupils uneven, right larger than the left. Four days subsequent still apathetic and complains of headache. A second lumbar puncture four days after the above entry yielded 40 c.c. of clear fluid under same pressure.

Two weeks after admission the patient was still apathetic, soporose with neck rigidity and showed slight flatness of the right side of the face. Eyes examined by Dr. Hay, at this time, showed optic nerve atrophy, so-called postneurotic atrophy with hemorrhage in the retina. The patient was brighter but there was still some neck rigidity and signs of hydrocephalus.

After four weeks the patient was able to be out of bed. There was some mental obtuseness, marked signs of hydrocephalus, no blindness, there was a distinct ataxia or cerebellar gait, mentality continues below the normal. The patient was up and about without temperature; played with other children.

Puncture fluid examined shows no bacteria; 100 per cent. lymphocytes, some reaction for sugar and albumin.

Von Pirquet tuberculin reaction negative. Blood showed 12,000 leukocytes, with a differential count of 51 per cent. of polymorphonuclears on admission. On discharge or near that, the count was 8,000 leukocytes. The temperature was normal after the first twenty-four hours stay in hospital, with the exception of a rise in temperature due to an injection of serum of Flexner given as a safeguard, should examination of the cerebrospinal fluid show meningococci. Discussion. This is a typical case of poliomyelitis resembling very much a tubercular form of meningitis. There were slight rigidity, stupor, hydrocephalus, and low leukocyte count. The history, however, showed an acute onset five weeks before admission to the hospital.

The puncture fluid also showed fully 100 per cent. of lymphocytes, a fact which might very well be linked with tuberculosis. The child was discharged from the hospital, however, well with the remains of the encephalitis in the form of hydrocephalus and impaired mentality. The only paralysis during the illness was ocular.

Comparative Medicine.—One point that has appealed to me since I have been interested in the study of this disease, is our ignorance concerning the domestic animals with which we are daily in so close contact. There is hardly one that has not had attacks of paralysis that have occurred either before or at the time of epidemics. While no relationship has as yet been traced between those epidemics of paralysis in our domestic animals, they are at least suggestive and show the need of a more thorough study of their diseases, and the instruction in comparative medicine in our schools to-day, so that the medical students of the future will not be as ignorant as we are.

We know sufficient now to demand the thorough destruction of all excretions, a thorough fumigation of the room occupied by the patients and all of its contents and as complete a screening of the house from flies and all insects as possible. Our experience with other infectious diseases further demands that there must be registration and quarantine if we are to get results. The registration will put the medical fraternity on their guard and will influence the laity to call in a physician in all slight fevers and minor ailments at their onset, for this is a disease most families dread. On the whole it will give the physician a chance to see the cases earlier and many of the mild cases will have attention that would otherwise be neglected. Cases should be charted by health departments and sources of infection traced.

The quarantine will eliminate the danger of spreading the disease by contact, no matter how small it may seem at present. The long persistence of the virus in the nasal mucosa of some cases makes a quaran-

tine of about a month necessary. If all of the mild, abortive cases and chronic carriers were known the manner of spread would then be more easily discovered.

We are bound to continue these precautions until the means of spread of this contagion is known, and then only can we fight with precision.

TREATMENT OF CANCER HIGH IN THE RECTUM *

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Modern surgery of cancer high in the rectum begins with the development of the sacral route by Kraske in 1885. Volkmann first suggested an abdominal incision in combination with the sacral route to determine the extent of the disease. Koenig was the first to report an operation of this type. In this instance he removed the entire rectum and brought the end of the bowel through the abdominal wall to form an inguinal anus. Some years later Jeannel employing the combined or abdomino-sacral operation, removed the rectum and brought the sigmoid down to the anus with sphincters intact.

Recently the sacral and the combined routes have each had earnest supporters. Most prominent among the advocates of the purely sacral operation is Hochenegg of Vienna. French surgeons and some of the younger German operators advocate the abdominal incision to tie off the superior hemorrhoidal artery and to determine the extent of the disease. More recently there has been a growing tendency to employ the combined operation. Kraske, in a recent paper, advocates the combined method in selected cases—those in which the tumor lies high in the rectum.

No single operative procedure for all cases of rectal carcinoma should be advocated to the exclusion of all other methods. Each case should be studied with the possibilities of permanent cure, the mortality rate and a functioning anus or the best substitute in view. The perineal, sacral and vaginal routes are best employed in early low-lying growths in which sphincter control can be preserved. Advantages of the sacral route are: (1) Rapidity—the operator is at once on the region of the disease; (2) danger of infection lessened when peritoneal cavity not opened; (3) time to complete operation less than by combined method.

The disadvantages are: (1) A bloody field from hemorrhage difficult to control; (2) extent of disease not readily determined because of the bloody field, infected glands high up escape notice or are out of reach; at times when operation is about completed it is finally seen that the disease is so extensive that no operation could be sufficient to complete removal; interference with the blood-supply of the stump in such manner that gangrene of the bowel follows with death by peritonitis; (4) often the bowel cannot be drawn down and a sacral or gluteal anus must be resorted

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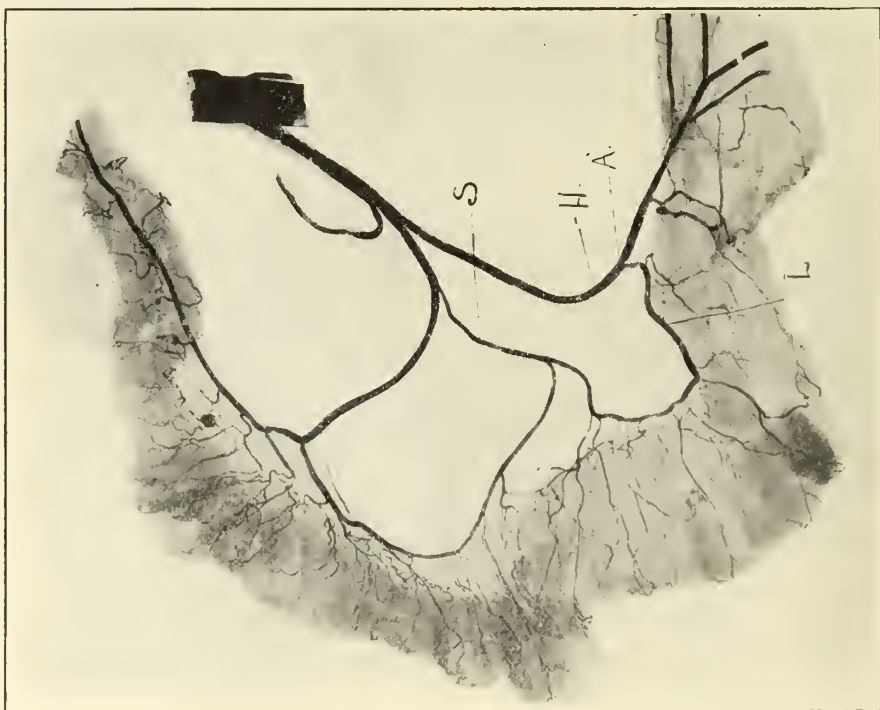


Fig. 1.—S, sigmoid artery; H, superior hemorrhoidal artery; A, critical point; L, last loop of marginal artery.

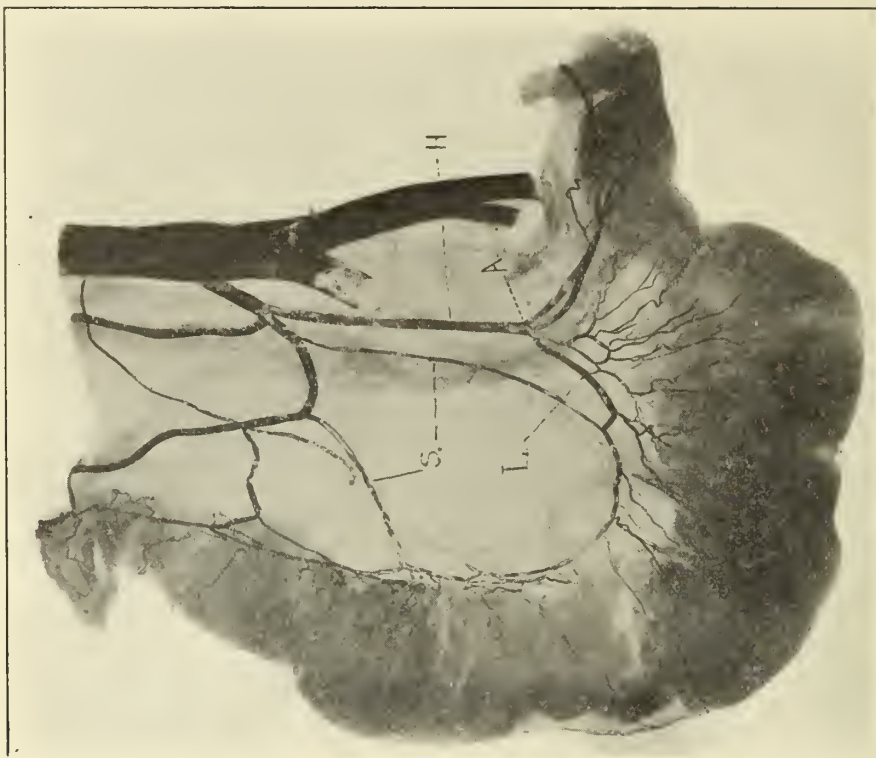


Fig. 2.—S, sigmoidal arteries; H, sup. hemorrhoidal artery; L, anastomotic loop; A, critical point.

to. I recall one case operated on by the sacral route where I found the disease so extensive in the pelvis after removal of most of the rectum that excision could not be considered, and the patient, after the ordeal of a severe operation, was not improved. Distant metastases in the liver and other abdominal organs may not be palpable through the abdominal wall and are not discovered until the end of the sacral operation when the peritoneal cavity is opened, or may not be observed at all.



Fig. 3.—H, sup. hemorrhoidal artery divides above anastomosis with loop L from marginal artery.

Ligation of the superior hemorrhoidal artery to free the bowel and permit the descent of the sigmoid is followed by gangrene of the stump when the ligature is improperly placed. Following a suggestion by Snideck, I injected and made *x*-ray photographs of the recto-sigmoidal anastomosis in twenty-one subjects. Figure 1 is the most simple arrangement found. The sigmoid artery, *S*, anastomoses with the superior hemorrhoidal artery *H* by means of the last loop *L* of the marginal artery. A ligature on the hemorrhoidal artery below the point of union at *A* results

in death of all of the bowel which receives its blood-supply below the level of the ligature. If the ligature, on the other hand, is placed on the hemorrhoidal artery above the critical point *A*, then the circulation is maintained by way of the sigmoidal and marginal arteries. Variations in the relations of these arteries are shown in Figures 2, 3 and 4. In Figure 4 there is no distinct loop; a ligature placed at any level on the hemorrhoidal artery would almost certainly result in gangrene of the bowel and death of the patient. Figure 5 is an injected specimen removed



Fig. 4.—There is no well-developed loop. "L" is an insignificant vessel in this specimen.

at autopsy showing gangrene of the bowel following ligation at the point indicated by the two arrows.

In cases where the bowel, because of anatomic relations, cannot be drawn down to the sphincters, or where the sphincters have been removed, it is necessary to create a sacral or gluteal anus when working by the sacral route. This procedure is advocated by Hochenegg and is as strongly condemned by some of his own colleagues, among them von Eiselberg.

With a sacral anus there is a tendency for the fecal current to pass straight on down the bowel as the convolutions of the rectum and lower sigmoid are pulled out in the attempt to bring the gut down. This results in greater incontinence of feces than when the inguinal anus is used. After the first psychic shock has passed, the patient is in far better control of the situation with an anus formed by drawing the bowel through the rectus muscle and then along a subcuticular path permitting of a compressing pad on the abdomen (Fig. 6). The patient can see instead of feel his condition and can manipulate his controlling apparatus far more satisfactorily. With an inguinal anus or colostomy a loop

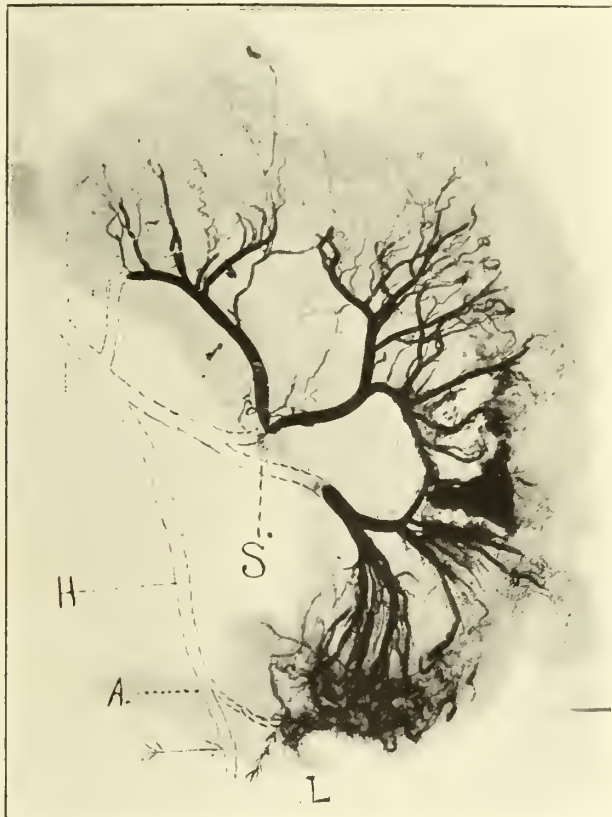


Fig. 5.—Specimen removed at autopsy. S, sigmoidal artery; H, hemorrhoidal artery; L, loop and last arcade of marginal artery; A, critical point. Arrows indicate locations of ligatures which resulted in gangrene of bowel and death of patient.

descending beneath the level of the anus may be left acting as a trap to accumulate feces. The inguinal anus, of course, can be done only by means of the combined abdomino-sacral operation. Another advantage of the combined procedure is the determination of the extent of the disease early in the work.

Since beginning this paper, on making the preliminary abdominal incision in a patient with rectal carcinoma, I found numerous small

metastases in the liver and immediately closed up without any attempt at removal of the primary growth. More thorough removal of diseased bowel, glands and fat from the level of the promontory down may be effected by the abdominal incision. Operating from below alone there is a constant tendency to leave as much bowel as possible looking toward final repair. Working from above, one has plenty of healthy bowel to



Fig. 6.—Abdomen of a patient one year after combined operation. Dotted lines indicate course of bowel between muscles and skin.

work on. Operating from above with a preliminary abdominal incision, one may close the peritoneum across the pelvis with the satisfaction of knowing that the sacral portion of the procedure will be completely

extraperitoneal. This is a matter of no small consequence as the diseased bowel in most instances ruptures, flooding the sacral field with fecal infection.

The mortality of the combined route has been high because cases considered inoperable by the sacral route have been included in this class of work, and in many instances the abdominal work instead of being attempted first, designedly has been employed as a secondary makeshift and infection has been carried up into the belly. The mortality also varies with the sex—a low rate in the female and a very high rate in the male. The female pelvis is larger and access to the sacral excavation



Fig. 7.—Rectum containing carcinoma from patient shown in Figure 6.

is easier. The vagina offers a means of rapid freeing of the rectum in the sacral stage of the work. In the male the narrow pelvis and the relation of the prostate, seminal vesicles and urethra to the rectum make the operation more difficult.

The border line between low tumors to be operated on by the sacral route has been indicated by Bruening as follows: Where the tip of the examining finger feels normal tissue above the upper margin of disease, the case is adapted for a perineal or sacral operation; all others are best treated by the combined procedure.

As a summary we would suggest that the combined route offers a nearer approach to the ideal removal of the diseased tissue and that though its mortality has been high in the past, this high mortality is due in part to the cases in which this method has been employed, cases in which it was seen from the start that a sacral operation was insufficient. As an operator repeats a difficult procedure he becomes more experienced and expert, and his mortality rate decreases as the number of his cases increases.

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IMPORTANCE OF EARLY RECOGNITION OF PATHOLOGIC CONDITIONS OF ADENOIDS AND TONSILS AND TREATMENT OF SAME *

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Pathologic conditions of adenoids and tonsils are probably responsible for more major and minor ailments in infancy and childhood than any other pathologic condition known, and if not removed may be the source of serious after-trouble. The importance therefore of an early recognition of a diseased condition of these organs is apparent from the following:

Thirty-three per cent. of all children are afflicted with adenoids and diseased tonsils of more or less severity.

Ninety per cent. of cases occur between the first and fifteenth year of age, but substantially all develop in infancy or in early childhood.

There are many cases of congenital hyperplasia, and a surprisingly large number of infants 6, 8 and 10 months of age who have sufficient adenoid hypertrophy to require operative interference during the first year of life. This class of patients always come first under the care of the general practitioner or pediatricist and for this reason I want to emphasize the importance of an early diagnosis and proper treatment, for it is the failure of early recognition on the part of the physician that is usually responsible for the serious results caused by prolonged neglect of hypertrophied lymphoid growths.

The hearing is impaired in a very large percentage of cases. Kyle says 90 per cent.; Woakes says 95 per cent. have aural complications. Dench claims adenoids are responsible for more than half the pathologic conditions met with in the middle ear, and that they are the principal cause of deafmutism.

Other more or less lasting complications that may result are: defective speech, listlessness, frequent attacks of amygdalitis, suppuration of the middle ear, anemia, headache and attacks of indisposition and nervousness. In marked cases there is frequently some deformity of the thorax, as narrow chest, chicken breast, etc. Frequently there is high arched

* Read at a joint meeting of the Chicago Medical Society and North Shore Branch, Nov. 29, 1911.

palate and an abnormal nasal septum. Delavan says some of the worst septal deformities we encounter are brought on by this trouble.

Function: Normal adenoids and tonsils possess a distinct function which consists of a certain irrigation of the tonsil surface by a lymph stream loaded with lymphocytes, this being Nature's defense against the entrance of bacteria into the system. These organs too help direct the action of neighboring muscles and assist in modifying the resonance of the aural cavity.

By reason of their exposed situation they frequently become diseased, and when hypertrophied become prejudicial to phonation; impair the normal resonance of the aural cavity; interfere with the action of important vocal organs; set up a catarrhal condition of the oropharynx, resulting in hypertrophy of the faucial pillars, plica and capsule and in numerous inflammatory adhesions binding all these parts together in one conglomerate mass.

When diseased these organs are prejudicial to health, the open crypts forming a suitable nidus for the development of bacteria. It is known that nearly every variety of infection may pass through the tonsils and other portions of the pharyngeal lymphatic ring to the nearest glands causing them to enlarge; the open lymphatic net-work gives free access to the absorption into the system of bacteria and their toxins, serving in this way as portals of entry for various pathogenic microorganisms.

Therefore tonsils of any size that are subject to repeated attacks of inflammation and contain occluded or dilated crypts filled with decomposing highly septic masses of epithelial or leukocytic debris and bacteria, are a menace not only locally but systemically. The latter phase of this subject is one of great importance and concerns not only the throat specialist, but the internist.

As illustrations of general systemic infections following closely an attack of tonsillitis, we have many instances where the evidence is conclusive that the micrococcus that causes acute rheumatism with its complications and sequelæ, as endocarditis, pericarditis, myocarditis, streptococcic peritonitis, streptococcic pleurisy, pneumonia, lymphadenitis, myositis, hepatitis, pancreatitis, iritis, scleritis, phlyctenular keratitis, gastro-enteritis and very commonly parenchymatous nephritis gain access to the interior of the body through this channel. I have not seen a case of endocarditis in the last ten years which could not be traced directly to an infection through the pharyngeal lymphatic ring.

Enlarged glands of the neck are invariably caused by infections from the mouth and pharynx, absorption entering by way of the lymphatic ring. The faucial tonsils, the largest of the lymphoid bodies in this region, are the main portals of infection. The surgeon who fails to recognize the importance of this atrium of infection when dealing with the subject of enlarged glands of the neck is derelict in his duty to his patient.

Since 1895 there has been a persistent attempt made to prove by laboratory investigation the relationship between tuberculosis and disease

of this glandular structure, some authors going so far as to attribute all forms of cervical adenitis to tuberculosis.

There are many instances of enlargement of the cervical glands of the neck of a non-tubercular nature and which are purely of toxic origin. In a large number of children presenting various degrees of adenoid and tonsillar changes, enlarged cervical glands are almost invariably found. Tuberculin tests show many of them to be tubercular in character, still a large percentage give a negative reaction, thus demonstrating their non-tubercular nature in many cases.

In children the question of latent tuberculosis is of special importance. The frequency with which adenoids and hypertrophied tonsils are found in early life would incline one to a belief in the occurrence of this form of tuberculosis in children to the extent believed by some, but the infrequency with which definite clinical manifestations of this affection is found at this time of life is an argument against this belief.

An interesting feature in connection with glandular enlargement or general systemic involvement from tuberculosis or other infections which may have their initial lesion in the tonsil and are carried into the system through this channel, is that it is not essential for it to be attended with a primary lesion at the seat of infection; indeed, the passage of tubercle bacilli through the tonsils is as a rule not followed by a change in these organs. Strassman, Koeckman, Friedman and others may be quoted in this particular.

Having just studied the evil consequences that follow in the wake of pathologic conditions of these organs in infancy and childhood, attention is now directed to etiology, symptomatology and signs in order that we may the more early recognize their diseased condition.

The post-nasal pharynx at birth is a space only one-fourth inch high by one-third inch wide. By the end of the first year this space is increased to nearly double this size. A slight hypertrophy at this period will cause obstruction; indeed, a small amount of adenoid tissue in a small nasopharynx is more formidable than a greater amount in a good-sized nasopharynx; thus the dangers to infants and young children.

Etiology. There is present normally a certain amount of lymphatic tissue in the vault of the pharynx, fauces, base of the tongue, on the floor of the nose and in the mouth of the Eustachian tubes. Histologically in many instances of adenoid and tonsil hypertrophy the growth differs in no wise from the normal lymphatic tissues, and aside from the symptoms produced by overgrowth it is impossible to say where one ends and the other begins. In other words the normal lymphatic tissue in these positions has no constant size, but varies decidedly in different individuals, resembling in this particular its analogue, Peyer's patches in the intestines. That the growths are then a hyperplasia and not a neoplasm, must be borne constantly in mind.

No doubt many constitutional factors must be considered with favor as predisposing causes of hypertrophy of this lymphatic tissue.

Heredity not infrequently is a contributing factor as evidenced by the statements of various observers who have reported the presence of adenoids

in infants at birth, and the additional fact that many members of the same family are often similarly affected; the latter condition being frequently met with. The former, however, is rare and seems to play only a limited rôle.

Tuberculosis, the frequency of the presence of tubercle bacilli in the growth, varies according to individual observers, being estimated by different authors at from 3 to 30 per cent., the former figure being probably the nearer correct. In cases of pulmonary tuberculosis, tubercle bacilli are rarely found in the growth. The evidence is certainly not conclusive that tuberculosis is an etiologic factor of importance and should be considered as acting only indirectly, that is by lowering the vitality the same as poor hygiene, poor diet, etc.

Syphilis is not a common predisposing cause except indirectly by lowering the vitality and resisting power of the individual the same as does tuberculosis.

Race. The Hebrew race is especially predisposed to this hyperplasia; on the contrary, the negro is singularly free. This latter fact has been explained as being due to their flat, open nares and the character of the palatine arch. Blond children are particularly prone to glandular enlargements and lymphatic hyperplasia.

Scrofula or struma was for many years the favorite and most plausible theory given as a causative factor of first importance, presumably because certain symptoms were recognized as peculiar to both, and the immediate deduction was drawn of a cause and effect. However, we find that in the majority of cases the symptoms of scrofula rapidly disappear on the removal of the diseased adenoids and tonsils, showing the process to be one of intoxication resulting from absorption from the diseased lymphoid tissue, due to insufficiency or failure of a particular secretion of the glands.

Inflammation is at present generally conceded to be the chief causative factor; catching cold, whatever that is, is characterized by acute, inflammatory swelling of the lymphatic tissue of the throat, and repeated attacks lead without question to chronic enlargement. Infectious diseases must be regarded as common inflammatory cause. No doubt the hyperplasia was present before the onset of the disease, but the severe inflammation produced at the time acts as a pronounced excitant and promotes further growth.

Diathesis. It is true in many instances that some diathetic condition seems to be at the bottom of a large number of cases; quoting Bosworth, there is what is called a lymphatic habit, or quoting Potain, "a lymphatismus," which means a particular susceptibility in children for lymphatic tissue to take on inflammation and so increase in size.

In view of all that has been said, it is certain that in different families the resisting power to excessive lymphatic developments is less strong through certain embryonic influences in the child affected than in others, just as in a family one child will be weak while the others are all strong.

Ventilation. Irritating dust, gases, unsuitable clothing, unwholesome food and faulty feeding are common agents for harm. Poor ventilation

is one of the chief etiologic factors. Inadequate ventilation of houses, flats and living rooms is a menace to health. Many people in a room, each rebreathing air that has been previously exhaled, is a menace to health. Every person requires 18 cubic feet of air an hour and in flats it is frequently impossible to get the required amount, the architecture being such that air does not circulate properly. They are not so well ventilated as houses, and are apt to be too hot or too cold. In New York the living is entirely in flats, and it is from this city that we are getting the greatest collection of statistics showing the necessity of having to remove adenoids during the first year of life.

Symptoms in infancy are not those of adenoids in childhood. Enlargement of the gland often produces symptoms during the first days of life, the mother or physician stating that the child has had snuffles since birth. Cases of this sort are frequently diagnosed as syphilis, but the other characteristics of syphilis are lacking. I have seen several such instances in my practice, and in at least one of my cases, a child aged 6 weeks. I had to remove adenoids so as to enable it to take nourishment from the breast. In this case the trouble was diagnosed as syphilis by a fellow practitioner, and when the possibility of adenoid was suggested he scoffed at the idea and stated that enlargement of adenoid tissue was never met with under 3 years and that he was so taught at a standard medical college, a statement I knew to be true. Very recently I learned of a similar case in the practice of one of my close friends where an operation gave immediate relief.

Snuffles when present are particularly evident when the child is nursing, but may occur during sleep if the child's mouth is kept closed. If the mouth is open when asleep, snoring replaces the snuffles. It should be remembered that both snuffles and catarrh are more often due to adenoid hypertrophy than to syphilis; on the other hand, neither snuffles nor catarrh invariably accompanies even a decided overgrowth of adenoid.

Snuffles result from an adenoid which produces irritation, and if it becomes large enough to obstruct the post-nasal pharynx, we have the further symptom of mouth-breathing.

Mouth-breathing, like snuffles, may be due to other causes than adenoid hypertrophy; however, in children the main causes of nasal obstruction are adenoid and tonsil hyperplasia, and during the first year of life the obstruction is due almost entirely to the adenoid alone. In most of the reported cases of hereditary hyperplasia, the nasal cavities have been totally free, the symptoms of obstruction being due solely to the adenoid.

An early indication of this condition during the first year is the presence of repeated colds as evidenced by nasal discharge, pharyngitis, etc. A characteristic sign, when present, is an irritating cough, or a peculiar crowing sound especially pronounced at night; it is apt to be persistent in character, but may be paroxysmal and may resemble closely the paroxysm of whooping-cough. Examination fails to reveal any physical signs in the pharynx or bronchi to account for the peculiar cough.

Another symptom is otitis media. It is not generally recognized how frequently it is due to adenoids. A child may have repeated attacks and

still the adenoid may be very small, so small, in fact, that unless a very careful examination is made it will be overlooked.

Another symptom occasionally found in early infancy is colic, due no doubt to the fact that in its efforts to nurse, the child swallows large quantities of air. One only, or all of these symptoms may be present.

The soft consistency of the adenoid, its location and its glandular structure predispose it to constant irritation. The result is that even where hypertrophy does not take place, congestion and infiltration of the glandular tissue will allow it to increase in size to such an extent that there are intermittent periods of complete and partial nasal obstruction. A large adenoid growth need not obstruct all the time but is sure to obstruct some of the time.

In children aged 2 years and upward, the symptoms are more or less constant cold in the head, catarrh, and a seromucous or mucopurulent discharge from the nose. Acute rhinitis is rare in children and what is apparently a cold in the head is usually an aggravation of a subacute inflammation of the pharynx and tonsils. Usually they have a hacking cough, frequent severe colds, more or less continuous catarrh and sore throat. In long-standing cases the symptoms are nasal obstruction, mouth-breathing, frequent epistaxis, asthma, night sweats, headache, nasal voice, repeated attacks of catarrhal otitis media, purulent otitis, earache and impaired hearing, malnutrition, anemia, narrow, sunken chest, with a history of snoring, nightmare, restless nights, etc. Great susceptibility to measles, scarlet fever, diphtheria, pneumonia, hay fever, frequent enlargement of the cervical lymphatic glands, various reflex symptoms, as cough, laryngismus stridulus, incontinence of urine and a great variety of minor troubles. With change in the weather and similar causes all symptoms become exaggerated, due of course to an increase or decrease of the distention of blood-vessels in the tissues concerned.

In marked cases the diagnosis can often be made from the facial appearance. The clinical picture presented is characteristic and striking. The childish face devoid of expression, stunted growth, impaired mentality with dulness and stupidity, open mouth, drooping eye-lids, vacant, dull or stupid expression, contracted alæ, narrow, sunken chest, pigeon breast, making it impossible to mistake the diagnosis. But in patients seen early the diagnosis is not easy, and to depend on the classic train of symptoms just given would be to let many cases pass undiagnosed until the general health, hearing and development might be everlastingly impaired.

In children and infants who have not the characteristic appearance just enumerated, adenoids should be suspected when a history of obstructed breathing through the nose, snoring, catarrhal symptoms, frequent colds, otitis, earache, inability to nurse and laryngismus are present.

In most cases there is impaired hearing. Kyle puts the figures at 90, and Woakes at 95 per cent. All authors admit that a high percentage of these patients have deafness more or less pronounced. Frequently the deafness is discovered by accident, the patients presenting none of the symptoms of adenoids for the reason that nasal breathing is substantially

only interfered with when the adenoid hangs down over the margin of the choanae. A small growth over the upper part of the septum, not large enough to cause obstruction to respiration, seldom gives rise to any symptoms aside from a constant secretion of mucus.

The various pathologic conditions about the Eustachian tube up to the present time have not received the serious consideration their presence demands, owing principally to failure of early recognition on the part of practitioners and pediatricists. We must impress on these gentlemen the fact that the commonest cause of serious changes in the Eustachian tubes is obstruction caused by lymphoid hypertrophy in the fossa of Rosenmüller, on the Eustachian eminence, or in the mouth of the tube, and that obstruction hereabouts is extremely rare without disease of the surrounding lymphoid tissue.

Frequently where the pharyngeal vault is perfectly clear, a small adenoid mass situated in close proximity to the tube may cause obstruction and interfere with ventilation of the tympanum and cause catarrhal changes in the tube itself, resulting in middle ear catarrh with tinnitus or suppuration and subsequent deafness.

The faucial tonsil, too, especially when the velar lobe is greatly enlarged, by pressing on the Eustachian tube from below, interferes directly with free ventilation of the middle ear, and in other instances where the Eustachian orifice is located quite low down and directly back of the posterior faucial pillars, it is subject to pressure from even moderately enlarged tonsils. A good rule to remember is, whenever you find faucial tonsils in a state of inflammation or hypertrophy you will positively find a pharyngeal tonsil in like condition, and whether this pharyngeal hypertrophy be much or little, it is more important that it be removed than the faucial tonsils.

Inspection reveals the faucial tonsil nearly always enlarged. There is also seen a mucous or mucopurulent discharge running down on the posterior pharyngeal wall just back of the uvula and soft palate. If the child is held before a strong light, the tongue depressed and the uvula lifted with a palate retractor, occasionally a very good view of the pharynx is obtained. Again, with the pharyngoscope the adenoid can frequently be plainly seen and studied *in situ*.

In small children where adenoids are suspected but where inspection fails to reveal their presence, and where for some reason the pharyngoscope or laryngeal mirror cannot be satisfactorily used, the suspicion is confirmed when by digital palpation of the vault of the pharynx there is felt a soft mass which bleeds easily, usually leaving a blood stain on the finger, no matter how much gentleness has been exercised. The rough surface of the adenoid is quickly detected by one accustomed to making this examination.

In order to make the examination, have the child held with its head against the left shoulder of the nurse, the right arm of the nurse holding the child's hands, and the left hand holding the forehead. The left thumb of the examiner is pressed against the right cheek of the child, pushing the buccal mucous membrane between the teeth, the ends of the

fingers of the left hand grasping the right side of the lower jaw, a firm grip is obtained which makes it impossible for a child with teeth to bite the finger of the examiner. The right index finger is used for passing through the mouth into the post-nasal space, or if this is too small to admit the index finger, the little finger may be tried.

It is better not to make a digital examination if the diagnosis can be established without, since it is usually more or less painful and frightens the child, but if it must be done it should be done quickly, as rapid manipulation avoids resistance and disturbance. The above suggestions do well in examining children over 2 years of age, but the presence of an adenoid in small children and infants is not so readily determined on account of the small space in the post-nasal pharynx, which is so small in most instances as not to permit the finger to be introduced. The diagnosis in this class of patients must be made from symptoms alone.

In adults and older children where the growth fails to disappear at maturity, the character changes from that of childhood. Inspection shows the usually highly arched palate with the "adenoid fringe" or its remnants and the fauces and pharynx covered with a slimy, sticky mucus. There is enlargement of the lingual papillæ and nodules on the posterior wall, "granular pharyngitis." The tonsils are usually sclerotic, the examining finger reveals the growth to be of a more fibrous nature than in children; the real size is deceptive and there is always more of the tissue than would appear from examination.

Prognosis. Conditions tend to right themselves at puberty; however, it is not uncommon for this lymphoid tissue to remain abnormally large after this period, thus serving as a permanent cause of nasopharyngeal catarrh. As a rule, the prognosis is good unless much damage has been done to special organs or special senses or in the general health or development of the child. If such damage has been done, the prognosis will depend largely on its kind and extent. In cases demanding radical treatment, once the offending mass is removed, ear changes and other conditions retrogress, and frequently normal or nearly normal condition results.

Parents should not be informed that following the operation the child will be entirely relieved of the symptoms such as head and ear trouble, etc. Parents should be warned that it is always possible for a child to have an acute infection of the nasopharynx without any demonstrable amount of tonsillar tissue.

The changes in the voice which is feared by the lay people and vaguely by some authors rarely, if ever, occurs. Singers whose training and quality of tone has been produced with hypertrophied tonsils, should be warned of the possibility of some change in the quality of tone due to unaccustomed action of the palate muscles. Usually the quality of the tone is much improved.

Treatment. An acute adenitis due to cold which was not preceded by adenoid symptoms may occasionally disappear on hygienic treatment. In cases of some duration there is no value in sprays, applications or internal treatment. In chronic cases operation is the only treatment that is of avail, providing it is not done too late. These operations should always

be done early and not subject the little patients to the grave results which are sure to follow the long continued presence of these growths.

When to operate: Do not operate where tonsils are simply somewhat enlarged, if normal in other respects, and which are producing no symptoms.

Do not operate in every case of adenoids, but only in cases where there is evidence of obstruction or some definite interference with health. Do not operate in every case of simple swelling of the pharyngeal tonsil or in simple otitis, for the symptoms are frequently only temporary and will disappear without operation. Unless the indications are very definite do not operate during the first year.

Operate when the tonsils by their size nearly fill the cavity of the pharynx, and as a result there is impairment of voice; whenever the lymphoid tissue is hypertrophied to such an extent that harm has, or probably will result in impairment to the general health; when there will result permanent impairment of any of the organs of special sense, in repeated attacks of otitis media, in cases of phlyctenular keratitis, iritis, scleritis when other methods fail and where the patient suffers from recurrent attacks of tonsillitis or adenitis.

Operate in cases of repeated attacks of peritonsillar abscess; in repeated attacks of tonsillitis when the attacks follow closely in succession; when chronic inflammation is a source of constant irritation; in reflex cough; when inflammation of the gland is repeatedly followed by cervical adenitis; where there is general systemic infection; when by hypertrophy and swelling there is obstructed breathing; when there is closure of the Eustachian tubes with attending ear pain, middle ear inflammation, deafness, etc.

Operate when there is general anemia; swelling and suppuration of the cervical glands; in cases of articular rheumatism and complicating endocarditis, where the tonsils are probably an etiologic factor; in tuberculosis; in chronic bronchitis in children; when a patient suffers from recurring adenitis or tonsillitis; in parenchymatous nephritis; hepatitis; pancreatitis, gastro-intestinal disturbances which are aggravated by acute attacks of the chronically inflamed tonsils.

Operate always to remove foci of infection and to restore the functional efficiency of the respiratory, phonatory and articulatory organs.

Operate in all cases of underweight in children in which organic disease can be excluded and in which there is evidence of diseased adenoid tonsils. Operate in all cases where there is a persistent temperature of from 100 to 101 F., apparently due to the presence of disease of these organs. Operate as early in life as there is positive evidence that the adenoid hypertrophy causes persistent symptoms.

Operation. Diseased conditions of these organs should be recognized as soon as they produce permanent symptoms and should be operated on thereafter as quickly as possible so as to avoid marked systemic effect. If a permanent result is to be expected, the operation should be as complete as it is possible to do it. Masses of lymphoid tissue should not be

left hidden either in the nasopharynx or between the pillars of the fauces. In other words, the operation of choice is tonsillectomy and adenectomy.

Anesthetic. An anesthetic and at least one competent assistant are essential, excepting in certain cases. In small infants the question of anesthesia is more or less a question of the desire of the parents. If left to me I do not advocate it in operating on infants; in this way you avoid the danger of the anesthetic.

In the choice of an anesthetic there is but one thing to be considered: safety. Chloroform I consider extremely dangerous in all throat and nose operations. Ether is the only general anesthetic advisable, being free from danger, effective and in the hands of a skilled anesthetist only a little more troublesome than chloroform. Statistics gathered by Packard conclusively show that ether is the safer of the two drugs. He found twenty-nine deaths recorded as a result of the anesthetic being given for tonsil operations of all kinds, of which twenty-six resulted from chloroform, two from ethyl chlorid, one from A. C. E. mixture and none from ether. (Ether is contra-indicated in tuberculosis, abscess or other diseases of the lungs.)

The table on which the operation is to be performed will vary in height according to the stature of the operator: one 4 feet in height makes it convenient for the operator to sit at ease during the operation. In order to bring the pharynx into a plane lower than that of the larynx the head of the table should be lowered so as to have it about 10 inches lower than the foot end. This inclination is such that the blood can be sponged out before it is swallowed or sucked into the trachea.

The desiderata for complete obliteration of diseased tonsils are: (1) an effective illumination of the field of operation; (2) a degree of separation of the tonsil from the surrounding tissues that will render the gland pendant.

Illumination is best obtained by a head lamp (preferably Kirstein) of some description where electricity can be used. Most of the lamps used by general surgeons are unsatisfactory as they leave the operative field in shadow. If for any reason the special lamp cannot be used sufficient light may be reflected from a large electric bulb held by an assistant on the opposite side of the table. In order to meet any contingencies such as the burning out of the more complicated illuminating contrivances, a large electric bulb with sufficient cord should be carried by the operator. These lights require no current controller, can be attached to an ordinary light socket and furnish sufficient light for emergency purposes.

Where both tonsils and adenoids require removal and where a general anesthetic is to be employed, the patient is placed lying on his side with the arm underneath drawn out behind his back, the body turned somewhat toward the operator so that he rests partly on his chest, his head lying on his cheek at the very edge of the table, his body being held strongly backward by an assistant. In this position the blood runs out of the mouth and does not enter the air passages. The operator takes his position at the side, the anesthetist at the head of the table. In this position the operator with a depressor controls the tongue, regulates the breathing

and requires the assistant to handle the anesthetic and the gag through the entire proceeding, and the forceps only during the last stage of the operation.

The gag, the blades being covered by rubber as a protection to the teeth, should be inserted on the side of the tonsil to be removed, and held well between the back molars. For the excision of the right tonsil the patient lies on the left side and conversely, the uppermost tonsil being the one cut out, so that the blood will flow downward out of the way of a view of the operative field.

Technic is largely a matter of choice. Some men develop a certain technic along one line and some another. Of the various methods advocated or brought forward in the last five years the operator should select that one which combines simplicity of technic with completeness and a minimum of traumatism. The dangers of tonsillectomy, hemorrhage, shock, traumatism and death from anesthesia, diminish greatly with carefully selected equipment and technic. The operation is a delicate procedure requiring an abundance of time and attention to the details of technic and should not be lightly undertaken by everybody.

Since the complete enucleation has been advocated, a great number of general practitioners and specialists have attempted to change their methods, and in learning the new operation the pillars have been damaged, the patients frequently being worse off than before operation. If surgeons, ophthalmologists and general practitioners must remove tonsils, they are advised to do a tonsillotomy until they may receive instructions in the details of complete enucleation.

Indeed, it is not always essential that a complete enucleation should be made. Crockett is correct when he states that in ordinary cases of simple hypertrophy it is unnecessary to remove the base of the tonsils, for a perfect result may be frequently obtained by removing enough of the tonsil to bring it down to normal size, so as not to project beyond the pillars. This may be done either with a snare, tonsillotome or punch. In simple hypertrophy the operation of safety is always tonsillotomy, until such time as the physician becomes familiar with proper technic required for enucleation.

Enucleation. When done under local anesthesia, either sharp or dull dissection may be used because of the more perfect control of the field of operation. Where a general anesthetic is to be given it should be done by blunt rather than sharp dissection, excepting perhaps in the hands of a few operators who have obtained special accuracy in dissection with sharp instruments.

Separation and removal should constitute two distinct steps. Illuminating the oral cavity with light from the head mirror, the separation can readily be done by incising the tissues with a Freer knife between the anterior wall of the tonsil and the pillar just below the inferior border of the velar lobe. A blunt dissector is then passed through this incision and swept up and down, thus separating the tonsil from the anterior pillar. The dissector is then passed over the top of the tonsil, at which point the operator should be careful to remember that the upper level of

the tonsil is considerably above that of the velum palati. The dissector is then carried downward between the tonsil and posterior pillar; no traction is made on the tonsil during this dissection.

The next and most important step in the operation is the dissection of the velar lobe out of its bed in the soft palate. Important, because experience has taught us that subsequent successful results of all tonsillectomies is in direct ratio to the more or less complete removal of the velar lobe. Thorough enucleation of the velar lobe is best accomplished by pulling the tonsil strongly inward and downward with a Volsellum forceps until the velar lobe becomes visible, when it can be severed with a sickle-shaped knife (Tydings) from its attachment to the palate. Frequently a satisfactory enucleation of the velar lobe can be done by inserting the finger in the incision made when dissecting the plicae triangularis from the anterior pillar, passing the finger upward and releasing the velar lobe from its bed.

With a good Volsellum forceps take a deep hold of top and bottom of tonsil, then draw well forward free of the pillars. A tonsil snare previously threaded with a No. 5 or 6 steel wire is now slipped over the gland and the snare drawn home gradually through the small attached portion. the gland usually coming out in its entirety with scarcely any traumatism. the tension outward being continued during the entire process. The deeper blood-vessels have been avoided by the elevation of the tonsils.

Enucleation with the finger should be done when possible. I have done it several times by simply continuing the separation stage of the operation when the tonsil is found tough and fibrous. While impractical in a large majority of cases, it should, however, be attempted when the tonsils are sufficiently firm for its accomplishment; the attempt should at once cease if the pendant gland crushes under pressure instead of rolling and turning about under the finger.

After removal, a good sized gauze sponge on a curved hemostat is inserted into the space between the pillars and pressure made while the anesthetic is again administered preparatory to removal of the other tonsil. In rare cases, where hemorrhage persists beyond four or five minutes, the tampon can be removed and a smaller one dampened and dipped in powdered desiccated alum and held firmly in the tonsil bed. Patients should always be kept under the anesthetic until hemorrhage stops.

Before the patients leave the table, examine carefully to see that no portion of a lobe of the tonsils has escaped dissection, and if so, seize the portion with a punch forceps and remove the fragment piecemeal.

When dissecting the gland the operator alone can sponge efficiently, and he should do so as often as the blood covers the field of work. If done quickly the patient need swallow no blood nor be embarrassed in his breathing. Except when holding a tampon on the bleeding gland, although the operator has pressure on the gland, the etherizing can proceed, for the work can be done by easy stages and with light anesthesia.

If adenoids are present let them be removed after bleeding from the tonsil stops. In infants and young children, if only adenoids are to be

removed, the operation can be done without an anesthetic and with very little shock to the child; in fact, it can be done practically as painlessly as making the ordinary examination.

For the purpose of operation an assistant is necessary to hold the child, while a nurse should be present to assist. The child should be wrapped tightly in a sheet which binds the arms to the sides and should be held upright by the assistant with the back of the head of the child against the assistant's left shoulder, one of his arms pressing against the arms of the child, the other hand pressing its forehead back against the shoulder.

A gag is now introduced and is held by the nurse while the operator holds down the tongue. He then passes a Gottstein, La Force or Schutz curette to the posterior nares, bringing the blade of the instrument as far up and as far forward as possible, then first by a backward, followed by a downward movement. In most instances the entire adenoid can be removed with one stroke of the blade. The fossa of Rosenmüller should be explored by the finger and a small Vogel's adenoid curette to be sure that no lymphoid tissue is left in this situation. The one essential thing in young children is to avoid getting an infection of the Eustachian tubes; therefore, operations should be done under the strictest aseptic precautions. The child is then put to bed without a pillow, lying on the side with the face downward, and the nurse is supplied with a spray containing 1 to 5,000 adrenalin, to be used in case of hemorrhage, in which case the child should be placed with face upward and the adrenalin sprayed through the nose.

On the day following the operation the majority of patients have from 1 to 2 degrees' elevation of temperature. With few exceptions they complain for three or four days of painful deglutition and some pain in phonation. It takes from eight to ten days for the fibrinous deposit covering the wound to clear off.

As to the results of this operation, a slight increase in the snuffles may be present for a few days.

Rarely is any after-treatment required for the first two days, then a mild antiseptic spray of saturated solution of boric acid with 5 per cent. alcohol to prevent infection of raw surfaces. If there is much bleeding the mouth can be kept clean and bleeding stopped by spraying the mouth and nose with a 5 or 10 per cent. solution of argyrol or protargol.

Accidents and complication during and following operation. Probably the greatest source of anxiety during the operation is found in the bleeding. In most cases hemorrhage is controlled easily; in some instances the flow of blood is checked with difficulty. Usually pressure with gauze or the application of the tonsil clamp will control hemorrhage, or in the absence of the latter gauze dipped in persulphate of iron powder and applied directly over the bleeding point by means of a curved hemostat, will stop ordinary bleeding in from five to ten minutes. Failing in this, find the bleeding point by retracting the anterior pillar and grasp it with a hemostat, the pressure of which will stop bleeding unless a large vessel

has been divided. In the latter case the vessel should be ligated with cat-gut suture.

Secondary hemorrhage is occasionally met with, and like primary hemorrhage can usually be controlled by pressure. Failing in this, we must resort to more radical measures. First, we should try to suture the pillars over a rôle of gauze. This can be done by a small curved needle, suturing the pillars from behind forward. When all the above means fail the common carotid artery must be ligated.

Sepsis has been met with in a few cases and emphasizes the importance of thorough asepsis both before and after operation.

Either pneumonia, acute mastoiditis, acute meningitis are complications occasionally met with and emphasize the importance of thorough equipment and technic.

Recurrences have a medicolegal aspect which is of vital importance at the present time. That infants and children operated on early even when the operation has been thoroughly done have recurrences is authenticated by the statements of numerous authors, as, for instance, Cohen, Jacobi, Freeman, Ludlum, Harris, Potain, Luellum, Delavan, Jaresky, Glogau, Hopkins, Gorke and others.

Freeman sizes up the situation as follows: "Recurrences are due largely to the predisposition on the part of the child to produce adenoid tissue and not to defective operation."

Felix Cohen: "While thorough removal is occasionally followed by recurrence, it is only in from 3 to 7 per cent. of cases."

Jacobi: "Recurrences are not always due to imperfect operation, but to careless after-treatment."

Ludlum: "Babies operated on early, even when the operation is thoroughly done, sometimes have recurrences. This, I think, is the reason for the indisposition on the part of specialists to operate up to 2 years of age."

Harris: "The protective function of the tonsil carries with it the inherent qualities of the tonsil to enlarge on the slightest irritation for the affording of further power of defense. This inherent tendency of the tonsil to enlarge is further seen in the frequent recurrences of the tonsil after removal. Up to the time of Hopkins' paper it was generally held that such recurrences do not take place; we now know that it is by no means uncommon."

Gorke discusses this subject in an exhaustive manner, especially from a histologic standpoint. After stating the two commonly held explanations for the recurrence, viz., malignancy and imperfect operation, and giving convincing proof that neither of these reasons can be the cause in the majority of cases, he shows that the structure of the growth resembles in the main that of ordinary pharyngeal hyperplasia, but differs in this particular, "that a sharp line of division of the different layers is not possible."

Personally I have seen secondary hypertrophy of tonsils and adenoids following operations done by several of our leading laryngologists. In some

instances I witnessed the primary operation to know that it was thoroughly done. During the last year I have seen two patients where secondary hypertrophy occurred and where the operation was done by a physician of note, who on every occasion proclaims in public that he had never seen a recurrence in a case where he had done the original operation.

As a result of experience along the lines indicated, I have arrived at the following conclusions: First, that no matter how skilful the operator, it is impossible by any method known at the present time to remove every particle of lymphoid tissue in either the pharynx or fauces.

Second, that the remaining particle of glandular tissues, be it even microscopically small, is capable under certain conditions of assuming a degree of hypertrophy equal to the original growth.

Third, that under favorable conditions in a certain percentage of operated cases a secondary hypertrophy of the lymphoid tissue in the pharynx will occur, no matter by whom the operation is done or how thoroughly he may think he has removed all glandular tissue.

Fourth, the reason perhaps we do not see more recurrences among our own cases is because when the obstruction recurs patients are likely to seek another physician; also that patients are more or less constantly changing physicians, and that when we do see secondary hypertrophy in the other fellow's patients we are inclined to believe that the primary operation was not complete. We should also remember that the other fellow is thinking the same of our cases.

In this connection I will report a case which illustrates beautifully the whole situation as I view it:

A boy, aged 4 years; complete tonsillectomy and adenectomy, June, 1909; operation done by a laryngologist whose skill, ability and reputation are second to none; examinations following the operation and six months later reveal no glandular tissue; child remained free from all symptoms for a year, at which time hemming to clear the throat was noticed; examination revealed a small piece of glandular tissue half the size of a pea located about the middle of the posterior pillar of the left tonsil. The throat symptoms continued to increase in severity and the glandular tissue to grow until at the end of another year it assumed a size as large as the original tonsil, filling the space between the pillars completely; so far as inspection and external appearances went it was a complete reformation of the tonsil. At the second operation no other glandular tissue was perceptible in the throat; four months later a bud of glandular tissue appeared beneath the margin of the palate in the space occupied by the velar lobe on the right side. During a recent attack of diphtheria this glandular tissue assumed considerable proportion; at this time also a smaller mass appeared in a similar location on the left side. Since the subsidence of the inflammation due to diphtheria the glandular tissue on the right side remains about the size of a cherry and that on the left about half as large as the right. Therefore, glandular hypertrophy began in the faucial tonsil one year after the original operation and in the velar lobe of both tonsils not until over two years after the primary operation.

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DISCUSSION

Dr. O. T. Freer: The obstruction to breathing caused by enlarged tonsils frequently makes general anesthesia a cause of anxiety, for such tonsils, protruding both backward and inward, leave little space in the throat as soon as the relax-

tion of the muscles in narcosis causes the tongue to drop back, so that under these conditions respiration may become alarmingly impeded, especially if the usual presence of an adenoid growth adds to the respiratory obstruction. In some cases, breathing, heretofore sufficient, becomes blocked as soon as a partly detached one of two large tonsils has to be drawn inward against the other prior to severing it at its base, especially if a clot or mucus fills the throat. Under such conditions of inspiratory obstruction it may be necessary to keep the tongue drawn out with tongue forceps and to repeatedly cease operating in order to wipe out the throat and give the patient air.

In addition to chloroform, I have found the popular combination of nitrous oxid followed by ether especially apt to lead to poor breathing during the operation and experience has therefore taught me to rely on ether alone to avoid a profound narcosis, and to always use the Ingals position of the patient lying upon his chest, with one arm behind him and his face looking slightly downward, so that blood and secretions may run out of his mouth.

I always remove the tonsils by knife dissection as described by me in the *Jour. A. M. A.*, 1909, lii, 547-550, in an illustrated article to which I refer those interested in the matter. It is sufficient to say here that this procedure never fails to remove all of any tonsil, whether large, small or cicatricially imbedded and that it cleanly takes away the important velar lobe of Casselberry. This method of operating arose from my dissatisfaction with the crude and unsurgical procedure of blunt dissection followed by the snare or punch. The injury inflicted by this method is great while the tough tissues in question cannot possibly be accurately divided by tearing implements, so that the anatomical divisions of the tissues are not followed. Among the mutilations due to blunt dissection and so-called "finger enucleation" are tearing of the faucial pillars to shreds, cutting off of a large portion of the soft palate with the snare, including the uvula, and the production of numerous sloughs from the damaged tissues. In one patient, seen by me for a colleague, gangrene of the side of the throat and death of the patient from endocarditis resulted from an operation by blunt dissection and the snare; in another case a fatal abscess of the neck occurred. Septic fever and violent inflammatory reaction are usual results after the tearing methods, which are especially objectionable because the walls of the throat are so peculiarly liable to gangrenous processes after dentalizing injuries.

All of these evil results are avoided by clean knife dissection, whose accuracy leaves the palate and pillars intact and I have had sufficient experience to say that the same accuracy avoids the opening of larger vessels in the pillars and so prevents serious hemorrhage. The danger from bleeding is a slight one compared to the danger from sepsis and as in other parts of the body the attempt to escape it by tearing out such parts as need removal means rough and injurious surgery.

The reason why tonsils should be dissected out is the frequency with which peritonsillar inflammation cicatricially binds the tonsils to the walls of the tonsillar fossa, so that in some cases even a sharp knife blade cuts through the tough tonsillar attachments with difficulty.

As to the removal of adenoids. Recurrences do take place, but most so-called recurrences are due to the imperfect work of the popular curets or adenotomes. While there is sufficient room in the nasopharynx of an adult or older child for the curet, it has not enough play in the minute throats of small children, the incisor teeth of the upper jaw checking the action of the blade downward while those of the lower jaw do not permit it to come far enough forward, so that fringes of tissue are left behind and in the choane and on the posterior pharyngeal wall. In addition the action of the blade is superficial and so leaves adenoid tissue in the pharyngeal vault. I have had many operations to do where previous attempts with the curet had left nearly all of the adenoid tissue in the pharynx. In addition the curets and adenotomes, unless held absolutely centrally, are liable to include in the ring-knife the Eustachian prominence if it project greatly, as it often does in children and so are liable to cut off a portion

of the cartilaginous tube, an accident which has more than once led to fatal hemorrhage.

For these reasons I have abandoned the eurets long ago and use only the pernasal removal of adenoids with my pernasal forceps as described some years ago in the *Annals of Otology*. The direct action of this forceps through the nose, guided as it is with the finger in the nasopharynx, permits the removal of every part of the adenoid tissue in all situations, so that both the posterior nares and the fossæ of Rosenmueller are thoroughly cleared. I have known of only one recurrence in all my operations, while in the text books as high a percentage as 30 per cent. is admitted as inevitable after the eurets.

These frequent recurrences are making many people averse to having the operation done for their children, so that the faulty work of the euret deprives many patients of the benefit of the removal of adenoid vegetations.

The technic of the pernasal removal of adenoids requires some practice and general anesthesia, but he who masters it, may assure his patients that there will be no recurrence, except in the instances so rare that they are of slight moment.

— The following "Fly Specks" are reproduced from the *Bulletin of The Chicago Department of Health*:

Before breakfast —

A swatfest

For the fly pest.

— Start the day right!

* * *

Are you granting license to flies
to peddle filth around your house?

* * *

Flies will —

Peddle, peddle, peddle.

Unless you —

Paddle, paddle, paddle,

Get busy!

Keep busy!

* * *

Flies
ollow
ilth

Fever
ollows
lies

Swatting
aves
ickness

If at first you don't succeed,
swat, swat again.

* * *

It's a short haul *from* the garbage
can *to* the dining room *via the fly*
route.

* * *

Bread makes a fine foot-wipe for
flies.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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SEPTEMBER, 1912

DR. JACOBI'S ADDRESS

Dr. Jacobi, President of the American Medical Association, recently attended the centennial meeting of the Rhode Island State Medical Society and delivered an able address which is of such great interest to all members of medical societies that we have thought it well to reprint in this connection certain portions of what Dr. Jacobi said. Dr. Jacobi is considerably past 80 years of age, but seems to retain his grasp on the present-day medical tendencies in a remarkable manner.

Not the least interesting part of this address is his reference to the family of Hohenzollerns, from whose oppression Dr. Jacobi escaped in 1848, together with Carl Schurz, Pretorius and other university scholars, many of whom settled in Illinois near Belleville, were known as Latin farmers and became valuable citizens.

We commend the reading of this extract from Dr. Jacobi's address to all our members.

THE EDUCATIONAL VALUE OF MEDICAL SOCIETIES AND LIBRARIES

ABRAHAM JACOBI, M.D.
NEW YORK CITY

There are more diseases than you know how to combat, more patent medicines and infant foods than paid doctors can eulogize in alleged original articles and loud editorials. We have five times as many medical

schools as are required to supply us with competent practitioners, twice as many doctors as are wanted by the sick or are capable of making a decent living, or are demanded by the necessities of sanitation; five times as many medical magazines as correspond with the actual digestive or productive possibilities of the profession. . . .

Hahnemann, one hundred years ago, had just founded and named his homeopathy, one of the last historical sectarian systems established both on the strength of his great learning and his whimsical imagination and really ludicrous postulations, which were still greater. He succeeded, however, unwillingly and unwittingly, in gradually undermining ill-tasting and indigestible poly-pharmacy and introduced a disbelief in drug omnipotence. The practice of our legitimate medicine owes him much. He proved, contrary to his intentions, that diseases may get well spontaneously, and facilitated the efficacy of the teachings of Louis of Paris, the revered master of our Jackson and Bowditch and Holmes, and the temporary predominance of the nihilism of the Vienna school. Hahnemann's influence you know to be still powerful in the preservation of the sectarian name, and in the faithful adherence to it on the part of the summer hotel piazza ladies who do not understand or care for Hahnemann's historical influence, which lasted a century—longer than any other system since the abolition of Galenism—because they are in the habit of thinking less with their brains than with their impressible hearts.

An all-important event of 1810 is the foundation of the University of Berlin, one of the proofs of an awakening on the part of a dull and impotent Prussian king, in whose family these two hundred years idiocy, genius and insanity have reigned supreme. . . .

I never miss the meetings of the state society and attend now and then those of my county. Many times I have conversed with young men, and those no longer quite young, as to their opportunities of learning in a session. I have been told: "I stay at home; I am not interested in the subjects discussed; I do not learn there." The latter is not true; even the occasionally, but rarely, dreary paper affords food for thought or stimulates criticism. I for one, have never been in any medical society without learning. If a paper furnishes little, the discussion yields more. Quite often the discussion is of more value than a paper. That is why the overloading of a program with many or long papers, to the exclusion of discussions, is a grave mistake. What a man tells of his own practice is a gain to me, as it was to him; viz., a new experience or the confirmation of a previous one. If discussions are dreary, it is mostly the fault of the presiding officer, who either is not well informed himself or is deficient in character and unable to stop garrulous and empty talk. I often feel like calling him to order.

What you want in medical society is advanced age and youth together. The latter must be trained into communicating its positive knowledge and its doubts. A man who has knowledge knows how to ask questions. Moreover, the society is the proper place for the young practitioner to train himself for publicity and larger gatherings. The young specialist

is gladly received and should make himself at home in the local and state society. He may be able to teach a special subject, and is welcome as an instructor; but what is more important to him is to learn from the all-round practitioner. For some time, it is true, some young specialists here may have wished to believe, or to make us believe, that they were born and required no making. I have made myself disagreeable before and have been suspected by the misinformed of hating specialism, which is a grievous mistake. The reverse is true. Indeed, I have been called a specialist myself. But when I have a right to expect a doctor like myself, a general practitioner, to reach above a low average, I want a specialist to be a master of his narrow art and at the same time to have a fair knowledge of the science of medicine, so that he may be able to discuss special subjects intelligently and usefully to the practitioner. That is all, but it is a great deal. That sort of a man or woman is welcome in a meeting of our societies, both in city and country. He is welcome to learn, welcome to teach.

The laboratory, or so-called laboratory, has taken the place of diagnosis and indication of treatment and what not; that is why we have so-called experts who diagnosticate and treat like a Christian Scientist by solemn absence. They treat your cases by an examination of a drop of blood, or an ounce of urine, and send you an elegant square piece of paper with their findings, which some of you who are too lazy to make your own examination, blindly accept. That is one of the mistakes made by us, the general practitioners, who once were and again must be the cream of the medical practice, the results of which are the disrespect we are held in by the credulous public that runs after specialists, mature or immature, who treat their local diseases as best or as worst they can and neglect the organism that harbors the local trouble.

VERY SMALL BUSINESS

A number of our members have mailed us copies of a boiler plate reproduction of an article which appeared in the *Rockford Morning Star*, Sunday, Aug. 11, 1912, and purporting to emanate from Dr. A. J. Markley, of Belvidere, the newly elected treasurer of the Illinois State Medical Society. Our correspondents have expressed surprise that these envelopes bore a Rockford post mark. For those of our members who are not acquainted with the geography of the state, we may say that Belvidere is the county seat of Boone County, and this county adjoins Winnebago County, the county seat of which is Rockford, where resides Dr. H. H. Richings, *de facto* member of the State Board of Health, as also Dr. C. E. Crawford, listed as a sanitary inspector of "the medical department of the state government," and Dr. Paul L. Markley, who, we understand, is a brother of the Treasurer. Which of these gentlemen has been burdening the mails with this reproduction we do not know. Just what the gentlemen, responsible for this reproduction, expect to accomplish by

scattering this misrepresentation of facts broadcast over the state we are unable to understand. Even if these statements were true, we do not see how the publication of such stuff in the lay press would benefit our society. The facts of the case are as follows:

The society having elected Dr. Markley to succeed Dr. Brown, the Council, as in duty bound, began at the earliest possible moment to arrange for the proper transfer of the funds of the organization. It was necessary first for Dr. Markley to furnish a proper bond; second, it was necessary to check up Dr. Brown's accounts. This was undertaken by a committee consisting, we believe, of Drs. Black, Marshall and Cooley. These gentlemen reside in different localities and are all busy men, having their private and professional affairs to attend to along with their society duties. About July 11, we had occasion to call on Dr. Brown in Decatur, and saw a copy of the letter he had that day addressed to Dr. Black, sending his check for all funds in his hands. It seems that the Council returned this check and requested that separate checks be made for the medicolegal fund and the general society fund. This caused another slight delay. The accounts were then sent to each of the members of the committee and just as soon as each determined for himself that everything was right the funds were sent to Dr. Markley for deposit in the bank of which, we understand, he is the vice-president. To have proceeded in any other way would have been wrong in the eyes of the law. Having received the money decently and in order we trust the new Treasurer will take early opportunity to apologize for the insinuations, unjust and uncalled for, which he and his friends have seen fit to scatter broadcast concerning an old and valued member of the state society.

THE NEW ST. LOUIS MEDICAL COLLEGES

We call attention to our correspondence columns where will be found a letter signed by Dr. W. U. Kennedy, of St. Louis, Secretary of the St. Louis College of Physicians and Surgeons and Barnes University Medical School. Inasmuch as we have been criticised for some remarks made concerning one of these organizations, we are glad to give space to Dr. Kennedy's letter, which seems to breathe the right spirit. The language of his letter would indicate that conditions have not, in the past, been good. We cannot, however, refrain from wondering at the action of this and one other school in St. Louis, in appointing to lectureships gentlemen from Illinois, some of them located a long distance from St. Louis; gentlemen who have had no previous experience as medical teachers, and granting great ability as scientists, it would seem could be of little real value when working at such a long range. At least one of them has accepted a lectureship in two different schools. We shall watch with great interest the two recently reorganized and rehabilitated medical colleges of the Mound City, this and the so-called National Medical University. We understand that the latter school is a combination of the American Medical College, a reformed eclectic institution, and the Hippocratean College, which, we believe, was a "sun down" institution.

CENTENARY OF DR. FRANKLIN R. PITNER, OF CLAY CITY, ILL.

Our veteran Ex-President, Dr. W. O. Ensign, of Rutland, a devoted friend of every member of the organization, has called attention to the fact that on Oct. 9, 1912, our fellow member, Dr. Franklin R. Pitner, of Clay City, Ill., will celebrate the one hundredth anniversary of his birth. Until a few years ago Dr. Pitner was in active practice, answering professional calls from city and country at all hours of the day and night, and the fact that he will have attained this great age should be made a matter of unusual attention on the part of the members of our organization. We therefore have requested Dr. T. J. Pitner, of Jacksonville, a nephew, to write up a biographical sketch of his uncle, and we expect to print a half-tone cut of the venerable one in our next issue. We also suggest that every one of our members send Dr. Pitner a postal card of congratulation, which shall reach him on the anniversary of his birth. All societies meeting between now and that time would do honor to themselves and their friends by preparing resolutions of congratulation which should be forwarded on or before that date.

Dr. Ensign calls attention to the fact that at the Springfield meeting of 1900, he was instrumental in getting together and having photographed some half dozen of the venerable members in attendance; these were: Dr. L. G. Thompson, Lacon, age 79, present at the first meeting; Dr. J. T. Stewart, Peoria, age 76; Dr. Robert Boal, Lacon, age 94, present at the first meeting; Dr. N. S. Davis, Chicago, age 84; Dr. F. R. Pitner, Clay City, age 88. All but Dr. Pitner himself have passed to the other side. Having reached this great age he remains to receive the congratulations of his brethren.

DR. CHRISTIE NO LONGER PRESIDENT OF THE TRI-STATE SOCIETY

That organization known as the Tri-State Medical Society of Iowa, Illinois and Missouri, has announced that its twentieth annual meeting will be held at Jacksonville, Ill., Sept. 24 and 25, 1912. The program states that Dr. Robert J. Christie, of Quincy, will preside and deliver an address, but we understand from Dr. Christie that he sent his resignation to the Secretary last November and does not expect to attend the meeting. Just what good purposes this triple-headed organization has ever served the medical world we have never been able to discover. The head of it having decapitated himself we suggest that it would be a good idea for the remaining members to dislocate themselves and disperse.

OSTEOPATHIC OOZINGS

The Osteopaths announce with great clatter that a research institution with a million dollars endowment fund will be established in Chicago. True only \$100,000 in actual cash of this amount is in sight. The mas-

sage artists claim they have visions of the other nine-tenths. One of the promoters has expressed himself as follows: "The prime object of the institution will be to verify osteopathic theories regarding diseases and health with regard to the condition of the body and the derangement of its structure. We will seek for the cause of disease the same as the Rockefeller institute."

Correspondence

THE ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS AND BARNES UNIVERSITY

ST. LOUIS, MO., Aug. 23, 1912.

To the Editor:—In reply to yours of the 22d, I am sending you an advance copy of the current *Bulletin* of the reorganized college of Physicians and Surgeons. As you will note by the announcement on page 3, there has been a complete reorganization, not only in men, but in spirit and methods. I personally have no desire to be connected with a medical school which is not in full accord with the tendency of the times and, so long as I am in official position, propose that the P. & S. shall be recognized as a clean and efficient school, or I will withdraw from it.

We have completely reconstructed and modernized the building, have entirely re-equipped the laboratories and, even with the short time we have been working, have an abundant clinic. We hope to deserve the respect and good will of every member in the profession.

If the statement of facts as set forth in our *Bulletin* meet with your approval, I shall take it as a personal favor if you will make mention of the fact of the reorganization and reconstruction of this school in your news columns.

Very truly yours,

W. U. KENNEDY.

INTERNATIONAL CONGRESS OF HYGIENE IN SEPTEMBER

SPRINGFIELD, ILL., Aug. 2, 1912.

To the Editor:—I beg leave to call the attention of the membership of the Illinois State Medical Society through the columns of your journal to the approaching International Congress of Hygiene and Demography, which will convene in Washington, D. C., September 23 to 28.

This Congress meets in Washington in consequence of an invitation extended by the Government of the United States at the Fourteenth International Congress in session at Berlin in September, 1907. In pursuance of a joint resolution of the Congress of the United States, the Department of State addressed a circular letter inviting the governments, including state, provincial and municipal, to participate in this Congress. Under date of Feb. 4, 1911, an invitation to the governor of each state and the District of Columbia was extended, and acceptances have been

received and committees formed from most all of the states. The committee from Illinois, of which I have the honor to be a member, would especially urge the medical profession to become members of this Congress, which embraces the entire field of preventive medicine. It is urged that as many members as possible attend the Congress, and if they cannot attend at least become members and receive the benefit of transactions, which will amount to more than 3,000 pages, and will be of extraordinary value.

I trust that you may commend this Congress editorially and publish this invitation if it meets with your approval.

An exhibit is planned which will cover every phase of constructive work in modern hygiene, and this in itself will be educational and worthy of being viewed by every member of our profession. I am,

Respectfully yours,

FRANK P. NORBURY, M.D.

SPECIAL ARTICLE

THE INTERNATIONAL TUBERCULOSIS CONGRESS IN ROME; AN OPTIMISTIC VIEW OF THE TUBERCULOSIS PROBLEM; AUTO- IMMUNIZATION

The eyes of the entire medical world were turned in April last toward Rome. The International Tuberculosis Congress, its discussions, reports, lectures and conclusions interest humanity to an extent incomprehensible fifty years ago.

It is extremely satisfactory to read Professor Sanarelli's address, optimistic in the extreme, which was delivered in the Roman Hall of the Castel St. Angelo, April 18. The account is taken from the *Tribuna*, the principal Roman paper.

Professor Sanarelli occupies the chair of hygiene in the University of Bologna, one of the oldest universities in the world.

Professor Sanarelli affirms that human beings who live in cities and towns, or crowded in any social center, can never consider themselves immune to the tubercular germ, which is ubiquitous, because spread and diffused by chronic cases which penetrate and circulate everywhere.

The latest biologic reactions obtained by means of tuberculin and statistics of autopsies all over the world confirm the fact that no individual of middle age who has lived an urban life has been able to escape some time or other an attack of Koch bacillus.

How is it, then, that the entire human race is not extinct? The human race has not died out because it is slowly becoming immune and vaccinating itself against the Koch bacillus.

Sanarelli does not admit the old doctrine of hereditary predisposition, nor will he admit that the children of consumptive parents are inevitably tubercular from their birth.

Contrary to all present ideas, he believes that what is inherited is not predisposition, but progressive immunity. The further mankind has lived from tubercular contact, the less has it been influenced by the tubercular virus, the more sensitive and vulnerable is it when met by tuberculosis. Every time a civilized man, carrying the tubercular germs with him, comes in contact with new races, exempt from every tubercular antecedent, we find a formidable outbreak of the disease similar to an epidemic, with rapid and fatal results. But after a few generations have passed, the disease takes on a slow and chronic course, as in civilized countries. This is indicative of an indifference, a toleration which is slowly increasing—it is the demonstration of a sort of biologic equilibrium which is taking place between the tuberculized object and the resistance of his social organism. This biologic equilibrium is due not only to hereditary immunity, but also to a real but unconscious vaccination which appears in all social tuberculized environments, and which takes place in connection with other infectious diseases.

Professor Sanarelli introduces us to primitive races, to the Red Indians, the Negroes of the interior of Africa, to the indigenous races of the Far East, to the Kalmuks of the Volga, to the Polynesians, etc., and shows that their first contact with civilized man was so fatal that tuberculosis ravaged and devastated vast districts.

EMIGRANTS AND SOLDIERS

Emigrants and soldiers can be compared in many ways to individuals of primitive races. Of Italian emigrants to the United States, those who more easily become a prey to tuberculosis are not the inhabitants of Northern Italy, Lombardy and Liguria, provinces where the disease is widely spread, but the natives of the South, from the Abruzzi, Basilicata and Calabria, districts which are freer from tuberculosis than any others in Europe in this respect. Next to negro children the children of Italian emigrants to the States pay the heaviest death tribute.

A similar phenomenon appears in military organizations. It is well known that tuberculosis is a veritable scourge in all European armies. It was generally believed that the recruits did not become infected in the barracks, but brought the disease with them. Professor Sanarelli shows that if this were the case in Italy, the greater number of deaths would be from the infected provinces, such as Liguria. Instead, it is the contrary which happens. The soldiers who come from the hitherto immune districts are the ones who catch the disease. The phenomenon is the same in all countries and in all social centers. It is the purest race, without tubercular antecedents, which pays the heaviest toll, when brought in contact with the Koch bacillus.

But in all human races we soon perceive a collective habit due to immune phenomena and to that unconscious vaccination which appears in any impregnated social environment in consequence of the introduction into the human organism of isolated tubercular bacilli which have become innocuous. Similar analogous symptoms have been observed in diphtheria, small-pox, scarlet fever, etc.

With this law of gradual immunity he explains the reasons and causes of congenital infection. The transmission of tuberculosis from a consumptive parent to a healthy one is in some cases very frequent, in others very rare.

The exterior appearance of health as to resistance or receptivity is absolutely misleading. The anemic offspring of a family who has lived long in a town may seem, at first sight, biologically inferior to the healthy child of a young country couple; but in contact with tuberculosis, the flourishing country product is unarmed compared to the pale-faced urban one. This law gives us the reason of the strong resistance of the Semitic race to pathologic influences of the urban environment, and to the great White Plague. For twenty centuries the Semitic race has lived a strictly city life, in the worst possible conditions, on account of its special tendency to a mercantile and commercial life. It evolved in various social centers, guarding jealously its own ethnologic type with all its moral and physical attributes, keeping up a regimen of life which expresses the most rigorous biologic isolation.

The consequence is that as a result of this strictly city evolution, the Jew has acquired the magnificent privilege of being the race the most capable of resistance to tuberculosis. But this is on the condition that he remain in the town; he falls a victim to it, when he takes to work in the fields in Russia.

IN ENGLAND

This condition is repeated on a much larger scale in England, with the intervention of analogous favorable conditions.

Professor Sanarelli has studied it in England, and described lucidly the beginnings of English industrial life. When the exodus from the country began, together with the concentration in the industrial and manufacturing centers of the rural population, consumption appeared like the plague, in an epidemic form. At that time, in the seventeenth century, the epidemic course of consumption was compared to that of smallpox. Conditions became worse with the discoveries of machinery and steam, which brought about a colossal concentration of the rural population in industrial centers which were ravaged by tuberculosis. But by degrees in England, the period of collective toleration and immunity set in. Long before any public or private efforts were started to fight the disease, all through the eighteenth and nineteenth centuries, tuberculosis began to be limited within narrower bounds, so that to-day the mortality from tuberculosis is less in England than in any other civilized country.

Prussia will soon follow the same biologic evolution as England, because there the industrial collectivity and progressive trend to city life, which began in the latter half of the last century, has already assumed gigantic proportions, and at the same time tuberculosis is decreasing. In conclusion, Professor Sanarelli maintains that to the cruel and pitiless doctrine of hereditary predisposition we must substitute the law of hereditary immunity.

The theory of congenital predisposition places all those who are threatened with it in the terrible alternative of isolation from the world.

or of premature death. The theory of hereditary immunity brings them back again into human society.

The rational defence against tuberculosis must not exhaust all its resources on the sick, but must concentrate its best efforts on the healthy individuals, because they alone are of real and immediate value and represent the future.

While the world is waiting for an anti-tubercular vaccine, which, sooner or later, will be used as the sole efficacious expedient for the public health, Sanarelli maintains that public authorities have for the time being a double task. First, that of carrying out a building policy, which, while it spreads human habitations over the largest possible area, will facilitate, if not the disappearance (which is absurd) at least the dilution and rarefaction of the tubercular bacilli in the air, rendering the causes of infection less frequent, and the contamination, which is inevitable in social centers, more innocuous.

In the second place, to look after and cure the latent tubercular individuals. The greater proportion of our young people who live in cities are already "bacillized" and therefore unconscious carriers of the silent and mysterious disease. We must save these young ones before they join the phalanx of the tubercular victims. The latest tuberculin reactions enable us to-day to discover at once all those who are attacked by the microbe. They must become *rural* for the time being. Not so much because the country life has a special curative effect, but because in the pure air, free from the germ, far from the danger of any reinfection, patients with a latent tendency to it can get well, can become immune, and can put themselves in a position to return to social life with better protection against the disease. The object of the anti-tubercular fight of the future must be to transform the collective environment in which we live and to prevent the concentration of tubercular germs.

The task to be accomplished is tremendous, because the anti-tubercular struggle is not only a social one, it is a phase of the external human struggle for life. But it is not true that the future of the human race will be progressively more and more in danger from tuberculosis, as pessimists affirm.

Professor Sanarelli is an optimist; he affirms that the social organism possesses endless resources of vitality and adaptability, and that the accidental disharmonies which disturb the marvellous equilibrium of biologic laws which regulate its life always find compensating energetic forces, so that we are authorized to consider with the greatest optimism, even with regard to tuberculosis, the future destiny of the human race.

—Translated by FANNY M. CARPENTER.

COUNTY AND DISTRICT SOCIETIES

CHRISTIAN COUNTY

The meeting of the Christian County Medical Society was held July 18, 1912. Charges were made by one of the Taylorville members against two of his brother physicians of unprofessional conduct in having their names printed in the local papers in connection with their cases, and also for fee splitting. A resolution was also adopted asking the newspapers to refrain from mentioning the name of any member of that society in connection with cases. The secretary has addressed the following communication to the Editor of the *Daily Breeze*.

My Dear Sir:—Inasmuch as the medical profession has for many years endeavored to afford each member of that noble calling an equal opportunity before the general public to win honor and reputation in his chosen calling, and at the same time has surrounded him with the protection of its united body, it holds that every physician is in honor bound to heed its behests and admonitions. One of these behests is that it is unbecoming for a physician to have his name appear frequently in the public prints in connection with his work, thus putting his calling in the same class as the tradesman bartering his wares and at the same time taking an unprofessional advantage of his fellow physicians. Therefore, and for the above reasons, the Christian County Medical Society at its regular meeting held at the Christian County Court House on the 18th day of July, 1912, passed a resolution instructing the secretary to request the papers of this city and the county, when making reports of medical or surgical cases, to omit the name of the physician or of the physicians as the case may be.

According to the above resolution I most respectfully submit the above request. Truly, Secretary.

The society has also protested to the Board of Supervisors against payment of county funds to physicians residing outside the county.

CLARK COUNTY

The Clark County Medical Society met in West Union, Ill., Aug. 8, 1912, at 2 p. m. Members present: Burnside, Pearce, Duncan, S. C. Bradley, Mitchell, Smith, Haslitt, McCullough, Johnson, S. W. Weir and L. J. Weir. Visitors present: Drs. Price, Low, Rafferty and Carlisle of Robinson, Ill. The minutes of previous meeting were read and approved. S. W. Weir, having moved from the county, resigned as secretary-treasurer and L. J. Weir was elected to that office.

L. A. Burnside read a valuable paper on "Gastro-Intestinal Diseases in Children," emphasizing cause and treatment especially. The discussion of the subject was participated in by nearly all members and visitors present. Among the points made were the importance of cold nights or chilling of the surface as a cause of diarrhea, too much food, too frequent feeding, bottle feeding, tainted food. In treatment eliminate the cause.

It seemed to be the consensus of opinion that diarrheal diseases in children are much less frequent and less serious now than several years ago due largely to the more thorough understanding among doctors and the laity of bacteria and their deleterious effect on milk, meat and other foods, especially in hot weather, and the spread of the information how to prevent contamination of food and the importance of not feeding too much nor too frequently. Fresh cow's milk kept cool, diluted properly and warmed when given was considered the best food for babies that could not be breast-fed, the latter of course, being a great deal the

best. In serious chronic indigestion and diarrhea no two cases are alike just as no two faces are exactly alike and the management and treatment must be different in different cases, diet being of paramount importance; egg-water, meat broths, barley-water, rice-water, etc., to be considered in older children or as substitutes for cow's milk in infants. In acute gastro-intestinal disturbances it is often best not to give milk or any other food for a day or two, let the stomach and bowels rest; permitting water to be taken freely as a rule.

Many interesting cases were reported and discussed.

A plan was considered and will probably be arranged to have a public lecture given in the near future on prevention of disease.

After adjournment, all were invited to a lawn where home-grown water melons were prepared according to the pure food and drug act, which were very much enjoyed.

L. J. WEIR, Secretary.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, May 15, 1912

The meeting of May 15, 1912, was a joint meeting with the South Side Branch with Dr. D. N. Eisendrath, president of the South Side Branch, in the chair. Dr. Geo. W. Crile, Cleveland, Ohio (by invitation), read a paper on "Kinetic Theory of Certain Diseases, with Special Reference to Internal Secretions." Dr. C. G. Grulee read a paper on "Relation of the Parathyroid Gland to Infantile Tetany (Spasmophilia)." Drs. J. C. Friedman and Sol. Strouse presented a paper on "Diagnostic Value of the Sugar Tolerance Test in Disturbances of the Internal Secretions." Dr. A. Werelius read a paper on "Do the Glands of Internal Secretions Functionate During Intra-Uterine Life?"

DISCUSSION ON THE PAPER OF DR. CRILE

Dr. Frank Billings: This is such a fascinating subject and so well presented by Dr. Crile that one is almost tempted to believe him. That the thyroid and other glands secrete substances which give rise to certain conditions is unquestioned. That there is a relation between these secretions and exophthalmic goiter is shown in the clinical manifestations of the disease. It is also certain that environment of the individual and the exhaustion of his brain and nervous apparatus, motor and emotional, give rise to enlargement of the thyroid and over-secretion, setting up a vicious circle which results in that disease entity.

In clinical work one finds examples of patients whose condition could be explained on the grounds mentioned by Dr. Crile. It must be at least fifteen years since I reported to this society sixty cases of patients suffering from Graves' disease. That was before the days of much surgery for that condition. All these patients were treated by rest. One of these patients I kept at rest for eighteen months, another for fifteen months and a third for nine months. As I recall it, forty of the sixty patients were improved and twenty were cured. That, of course, shows that proper environment and rest may so quiet the nervous system that there is no longer a need for the secretion of the thyroid, and therefore the gland diminishes both in size and in function.

So that while I am ready in a way to accept the principles advanced by Dr. Crile, still I cannot accept his propositions with reference to other conditions.

I think that it has been proved that in a typical case of Bright's disease, with high arterial tension, there is not an over-secretion of the adrenals; there is not in the blood a greater amount of adrenalin or epinephrin. Bright's disease is just as apt to occur in individuals whose lives and surroundings are not such as to excite secretion as it is in the other class. Take the farmer, for instance, who is, perhaps, physically excited by work, but who shows no mental excitement. I saw a man to-day, aged 68 years, with high arterial tension, 240 mm., an enormously hypertrophied heart and dilated aorta, arteriosclerosis and angina pectoris, and he has done nothing but milk cows and never drank any alcohol.

On the other hand, one living in this big city, with its excitement and flurry, and some of the healthiest men I have met are men who are under strain, mental strain, without very much excitement otherwise, who would disprove Dr. Crile's theory. So that I cannot accept his proposition that the thyrogenetic elements of fear or over-excitement stimulate internal secretion so as to cause in a certain class of individuals a greater susceptibility to that disease. Still what he has said is expressive of the man. His initiative and industry, if possessed by us all would lead to much additional knowledge and information that we do not possess to-day. While all he has said will not eventually be borne out by fact, still it cannot fail to prove of enormous value to us.

As to Dr. Friedman's paper, his subject interests any clinician who thinks. My attention was called to the fact of the relation of the internal organs and their secretions to the glycolytic powers of the body, and for at least ten years I have tested out many patients suffering from exophthalmic goiter. I have talked to the surgeons to adopt measures of research if they would aid the internist in this direction by waiting longer before they operate on these patients.

My observation of these patients has been based on the statements of physiologists that the human body ought to destroy 160 grams of dextrose if taken on an empty stomach. I have used 50 grams on a fasting stomach with many of these patients and over 50 per cent. of the patients tested show an inhibitory influence associated with this thyroid enlargement on the glycolytic function of the body.

Such clinical experiments as have been done by Drs. Friedman and Strouse are the things all of us ought to do in our hospital work. That is the work which will result in the accumulation of knowledge which we lack in such diseases as diabetes mellitus. We talk in a general way about the glycolytic powers of the body in relation to these glands. All the work has been done on animals and we have neglected to make observations in our hospitals. If the surgeon would give us the opportunity to do such work as that on all classes of patients or do that work themselves, a vast amount of knowledge would come to us.

Dr. A. B. Kanavel: I have examined carefully all the cases of hypophyseal disease which have come to my attention with regard to the sugar reaction, and while in the main my results were the same as those reported by Cushing, there have been exceptions. In a case, a cyst of the hypophysis of eight years' duration, there was a marked glycosuria while the patient was in the hospital. If we generalize on such things, we are apt to make mistakes. Surgeons should be scientists and not carpenters. They should examine all their cases carefully.

Dr. A. D. Bevan: One might say that the dreams of to-day often prove to be the realities of to-morrow. I think that Dr. Crile's work is certainly original; it shows imagination and enthusiasm, to say nothing of hard work. I must admit, however, that I cannot accept all he says. I do not believe that Graves' disease is the result of emotions. I have been rather unfortunate in imitating him in his efforts at stealing away the goiter. I heard Dr. Crile present this subject before, how he would without the knowledge of the patient give a little nitrous oxid, claiming that he was going to spray the throat, and then remove the goiter without making any impression on the patient's brain. I tried that method once, and when the lady came out from under the anesthetic she said so many things to me that I have not tried to steal away any more goiters.

In presenting such a new idea as this, we must be careful to analyze it leisurely and judicially. I feel about this anoci association that important as are the changes on the brain cells during anesthesia, much more important are the changes in other cells of the body, the kidneys, liver, heart, etc. The impressions on the brain cells tell a very small part of the story.

He and I have had a controversy on this point, especially on the methods of anesthesia. I advocated giving the anesthetic as simply as possible instead of by the more complicated scheme which he has introduced with his anoci association. I sent him my pamphlet on anesthesia and wrote on it, "Read, repent and reform." He said he was too old a sinner to do that. He made a good suggestion, however. He said he would look up his mortality in his last thousand cases and tabulate

the results, and that I was to do likewise. That is one of the ways to clear up such a problem, and we now are at work on it. He is taking his last thousand cases of anoci association, and I am taking my last thousand cases. When the work is completed we will give you our results.

Dr. A. J. Ochsner: I have always been interested in what Dr. Crile is doing. There is something in what Dr. Crile has told us. I have had friends make my hospitals rounds with me and try to pick out the patients operated on the day before, and they failed to do it, because we never do anything that we do not have to do during an operation. We first try to eliminate the harmful and then the harmless things that are useless, and in this manner we get down to a point where there are only a few things left to do. As a result of this method the amount of traumatism is reduced to a minimum.

That is what Dr. Crile is doing. He is enthusiastic about keeping these patients in the proper condition before operation, and he is getting good results from his methods. His enthusiasm and his research are of benefit to us all.

Dr. G. W. Crile (closing the discussion): I was very much interested in the comments of Dr. Billings.

I dare say that Dr. Billings will agree that heavy physical labor and unusual emotional excitation react on the body injuriously. The expectance of life is known to be cut short by such strain as the Chinese burden bearers assume, certain heavy industrial labor.

I have never had Dr. Bevan's experience in removing the thyroid without the knowledge of the patient. Of course I always have the full consent of my patients. On the contrary, I have received only appreciation for the consideration I have shown them.

If the entire brain is asleep, the patient is dead. If only a part is asleep, that part which remains awake is as much influenced under ether anesthesia as if the operation is done while the patient is wide awake. The anesthesia holds in bondage the subconscious brain. A patient in good physical condition goes to the operating room and returns half an hour later a wreck. What has happened? Just the same thing has happened as if the patient had been subjected to a terrible accident while wide awake. The subjective mind is wide awake during an operation. The brain is alive to all stimuli, and knowing that fact we should operate on the principle of anoci association.

When Dr. Bevan and I produce our tables, if his is better than mine, remember that anoci *association* is being backed up by a less well qualified surgeon than is his *ether* method.

DOUGLAS COUNTY

Dr. Carl E. Black of Jacksonville addressed the Douglas County Medical Society at their regular quarterly meeting held in Tuscola, July 27, 1912, on the subject "Displacements of the Colon," illustrated by stereopticon views, giving history of case operated on and complete history of the various causes of this condition.

The paper was voted a decided success by our Society coupled with a request that he return at some future time.

EDGAR COUNTY

The Edgar County Medical Society met in the Carnegie Library, at Paris, Wednesday, July 31. Dr. E. N. Cooley, of Danville, delivered an address. Dr. W. S. Jones, of Redmon, read a paper on "Medical Legislation by Committee."

JERSEY COUNTY

The Jersey County Medical Society met at the Court House at 2 p. m., July 9, at Jerseyville, pursuant to adjournment, with Dr. A. K. Van Horne in the chair. The following members were present: Drs. Van Horne, Barnett, Gledhill, Tittering-

ton, Bohannon, Cheney, and C. W. Evans, of Fieldon, Ill., was a visitor. On motion the reading of the minutes of the previous meeting was dispensed with.

Dr. Bohannon read a paper on "Summer Diarrhea"; discussion followed by Drs. Gledhill, Titterington, Evans and Barnett. Dr. C. W. Evans' application for membership in this society was offered. On motion of Dr. Titterington, Dr. Evans was requested to address this society at the September meeting on a subject of his own choosing. On motion the society adjourned until the August meeting.

MACOUPIN COUNTY

The Macoupin County Medical Society held its third quarterly meeting in the I. O. O. F. rooms at Gillespie, July 23, 1912.

The meeting was called to order by the president, Dr. C. D. King. The secretary, Dr. J. P. Matthews, then presented Dr. J. W. Morgan, the new president, who with a short address took the gavel and assumed the office. Dr. T. D. Doan, of Scottville, was escorted to the secretary's desk and assumed the duties to which he had been elected.

The names of Drs. Wm. L. Powell and I. H. Neece, of Palmyra, were presented for membership, and on being presented to the censors were according to custom held over till the next meeting.

After a report from the House of Delegates by Dr. Doan, the society adjourned for lunch, being the guests of the physicians of Gillespie.

Dr. William Engelbach, Professor of Medicine at St. Louis University, gave a stereopticon demonstration with a talk on "The Diagnosis of Unusual Diseases of the Thorax." Discussion by Drs. Sterieker and Titterington, of Springfield, and others.

Dr. Renner, of Benld, gave a paper on "The Hygiene of Pregnancy and the Management of Normal Labor." After a vote of thanks to Dr. Engelbach and all other doctors who helped to make the meeting a success, the society adjourned to meet at Palmyra, October 22.

The meeting was considered one of the most interesting the society has held for years, about thirty-five physicians being present.

Those who were present at the luncheon were: Drs. William Engelbach, of St. Louis; G. F. Sterieker and Titterington, of Springfield; M. B. Titterington, of Jerseyville; J. W. Bareus, J. S. Collins, L. H. Corr, J. P. Denby, J. B. Liston, J. P. Matthews, of Carlinville; W. M. Gross, H. W. Rice, E. B. Hobson, J. N. English, L. H. Denny, C. D. King, J. H. Hall, of Gillespie; A. H. Simmons, Girard; Ben Hudson, E. W. Crum, Wm. L. Powell, I. H. Neece, all of Palmyra; W. B. Dalton, T. D. Doan, of Scottville; J. L. Kerrill, R. R. Bobzin of Shipman; T. W. Morgan, E. R. Motley, of Virden.

MADISON COUNTY

The July meeting of the Madison County Medical Society was held under the trees on the lawn in front of the residence of Dr. and Mrs. W. H. C. Smith, of Godfrey. Owing to the absence of the president, Dr. G. Taphorn of Alton was elected president pro tem. Members present: Drs. Taphorn, Wedig, Halliburton, Yerkes, Hirsch, Wahl, Oliver, Sims, Barnsback, Beard, Burroughs, Shaff, Joesting, Duggan, Cook, Fisher, Tulley, Eaker, Smith, Davis and E. W. Fiegenbaum. Visitors: Dr. James Squires of Carrollton, and Dr. O. O. Gibberson of Alton. After a short business session, in which Dr. M. D. Tibbetts of Highland was elected to membership, the secretary read a paper prepared by our president, Dr. E. C. Ferguson, who was unavoidably absent. The paper dealt with "Some Causes of Some Nephritic Symptoms," and gave evidence of much thought and research, throwing considerable light on some of the obscure phases of nephritis and its complications. The paper was highly appreciated by the members and adds to the literature on the subject. The chair appointed Drs. Smith, Fiegenbaum and

Shaff as a committee on resolutions on the death of our fellow member, Dr. A. J. Ihue, of Fosterburg. These resolutions will be published in full in our September issue. Dr. J. M. Pfeiffenberger was reported in the hospital at Alton, following appendectomy, and Dr. A. E. Cook was instructed to send flowers. On motion of Dr. W. W. Halliburton, Alton was selected as our next meeting place to include a boat ride on the river. On motion of Dr. E. A. Cook, a vote of thanks was extended to our hostess, Mrs. W. H. C. Smith, for the generous hospitality extended to the profession and for the elegant refreshments.

PIKE COUNTY.

The regular July meeting of the Pike County Medical Society was held at Pleasant Hill, July 25, 1912. After a bountiful dinner served by the ladies of the Methodist Church, in the dining room of the church, the society adjourned to the parlors for the meeting. President Harrison in the chair. Members present were: Drs. Gay, Emma Gay, Aiton, Pollock, Thurman, Beavers, Kaylor, McKinney and Duffield. Visitors: Drs. Nickerson, Wells and Miller from Quincy; Drs. Dreyfuss, Heatherton, Goodman and Pierson from Louisiana, Missouri; Drs. Bankhead and Bartlett from Clarksville, Missouri. After an invocation by Rev. Mitchell, the society proceeded to business.

Dr. L. H. A. Nickerson read a paper on "Summer Diarrhea," besides giving a talk on official subjects. In the absence of Dr. W. W. Kuntz who was on the program, Dr. Duffield gave a demonstration on how to resuscitate the newly born by his method. Dr. J. E. Miller read a paper on "Necessary Operation Often Neglected by the General Practitioner." Dr. L. S. Lacey read a paper written by the late Dr. J. Smith Thomas, shortly before death, on the 19th of July, entitled "Good Doctors." This was much appreciated by all who were intimately acquainted with Dr. Thomas.

The usual resolutions of respect were read and ordered to become a part of our minutes and to be published in the local paper. Resolutions were adopted regarding our entertainment by the citizens of Pleasant Hill. Society adjourned subject to call of society.

PUTNAM COUNTY

Fee bill adopted by the physicians of Putnam County:

Office Practice

For ordinary advice given at office	\$1.00
For such advice when minute physical exploration is required.....	3.00
Advice by telephone	1.00
For written opinion or advice to patient.....	5.00
For an opinion involving a question of law.....	25.00
Microscopical examination of urine.....	5.00
Microscopical examination of sputum.....	5.00
For first advice in gonorrhea.....	5.00
For vaccination	1.00
Urinalysis	1.00
Minor surgical dressings	1.50

General Practice

For a visit within city limits	1.50
For a night call within city limits (after 9 p. m.).....	2.00
Visit after 9 o'clock	2.50
When the physician is detained, for each hour.....	1.00
For a visit as consulting physician in city (in medical case).....	5.00
For visit outside city limits, each mile and major fraction thereof.....	1.00
For every other member of the family prescribed for.....	.50

Night visits in the country, 50 per cent. added to regular fee.....	
For consultation in country, the same fee, with the addition of mileage....	
For each visit in case of small-pox.....	5.00
Administration of antitoxin, each case in addition to regular fee.....	2.00

Obstetrical Practice

For an ordinary case of midwifery in the city including 2 subsequent visits..	15.00
For the application of forceps.....	20.00
For any indisposition of mother or child, after the second visit, the same fee as an ordinary visit.....	
For every hour the physician is detained beyond four, an additional fee of..	1.00
For delivery after-birth alone.....	10.00
For insurance examination for fraternal societies.....	1.00
For a postmortem examination in a case of legal investigation.....	25.00
For a postmortem examination made at the request of the family or relations	20.00
Qualifying as an expert witness, per day or any fraction thereof.....	25.00

For any medical or surgical advice not named in this minimum fee bill or for any exceptional or unforeseen conditions occurring in an operation, a charge will be made proportionate to its nature, extent and importance.

All visits to be charged for at same rate, whether made in response to a call to office or while in the neighborhood.

DR. L. B. ELLISTON,

DR. JOHN AIMONE,

DR. FRED C. TAYLOR,

DR. WM. A. SIMMONS,

DR. H. M. WILSON,

DR. H. B. JOYNSON,

DR. G. A. MCCORMICK,

DR. M. C. WEEKS.

ROCK ISLAND COUNTY .

The bimonthly meeting of the Rock Island County Medical Society was held at Rock Island, August 13, with twenty-five members in attendance. Dr. L. H. A. Nickerson, of Quincy, president of the Illinois State Medical Society addressed the society and urged an increased cooperation of county societies with the state organization, saying that the result would make the state society more effective; its influence would be more powerful and greater things would be accomplished. Dr. Nickerson also read a paper on "Headaches, the Symptoms and Methods of Treatment." Dr. W. H. Ludewig of Rock Island opened a discussion on the subject. Dr. A. E. Williams gave a clinical demonstration, followed by a paper on "Vaccines," by Dr. J. C. Souders of Rock Island. Dr. A. M. Beal led the discussion on this subject. After the program the members gathered at the New Harper Hotel where a dinner was served at 8 o'clock.

STEPHENSON COUNTY

The Stephenson County Medical Society held its meeting at Krape Park, Tuesday afternoon, July 30, with a picnic program. The literary program began at 3 o'clock on the general subject of "Appendicitis." A lunch was served at 7 p. m. The following program was rendered: "Etiology," Dr. Collins; Discussion, Dr. Harlan. "Symptoms and Diagnosis," Dr. Beek; discussion, Dr. Hutchins. "Medical Treatment," Dr. Burns; discussion, Dr. E. H. Best. "Surgical Treatment," Dr. Karcher; discussion, Dr. Arnold. "From the Viewpoint of the Rural Physician," Dr. Thompson, Cedarville.

WABASH COUNTY

The meeting of the Wabash County Medical Society was held in Schneek's hall at Mt. Carmel, July 23. It was one of the best and most helpful in the history of the organization. The meeting was called for 3 o'clock and did not adjourn until 6 p. m.

Dr. B. G. R. Williams of Paris, Ill., the principal speaker of the occasion, read a paper on "The Diagnosis of Incipient Phthisis" which was ably handled by the doctor.

Dr. S. W. Schneek, of Mt. Carmel, president of the society, presented a paper on "Pregnancy." He also gave a report of the State Medical meeting which was held in May last at Springfield, and to which he was a delegate from this county. The report was well received by all.

There were no clinics presented and instead of this some special laboratory tests were made.

The following from out of the city attended the meeting: Drs. Fred Brines, of Lancaster, G. B. Reis, of Albion; R. J. McMurray, of St. Francisville, and C. E. Gilliatt, of Allendale.

WILLIAMSON COUNTY

The June meeting held on the 25th was really a summer picnic held at Marion Electric Park and given over to fun, fishing and feasting.

The July meeting was held the 23d, in the Elk's Home at Marion, when the following program was to be heard: "Therapeutic Value of and Indications for the Use of Emetin and Copper Arsenite," Dr. G. J. Baker, Jr. Discussion, Drs. Miller and G. W. Evans. "Therapeutic Value of and the Indications for the Use of the Various Sulphocarbolates in Treating Bowel Affections," Dr. Perry. Discussion, Drs. Boles, F. C. Murrah, F. M. Sanders. Clinics and reporting cases.

WOODFORD COUNTY

The Woodford County Medical Society met in annual session in Eureka, May 7, 1912, with President J. I. Knoblauch in the chair. Those responding to roll call were J. I. Knoblauch, James Twedale, N. B. Crawford, C. B. Higby, S. H. Rutledge, F. E. Briggs, E. R. McBroom, H. A. Millard. Minutes of previous meeting read and approved. Annual report of the secretary-treasurer read and approved. Officers were then elected for the ensuing year as follows: president, C. B. Higby; vice-president, E. R. McBroom; secretary-treasurer, H. A. Millard; censor for three years, F. E. Briggs.

Dr. S. H. Rutledge then read a very able paper on uremia and reported a number of very interesting cases which were freely discussed and much enjoyed by all present. Society then adjourned to meet in Eureka October 1, 1912.

H. A. MILLARD, Secretary.

REGISTRATION AT SPRINGFIELD MEETING

The following is a list of members who attended the last Annual Meeting of the Illinois State Medical Society:

- Adams, A. L., Jacksonville.
 Adams, E. M., Gridley.
 Agnew, Frank M., Makanda.
 Albro, M. Z., Chicago.
 Alguire, Annie B., Belvidere.
 Allaben, J. E., Rockford.
 Allen, Dudley P., Cleveland.
 Allison, F. M., Gardner.
 Amerson, G. C., Chicago.
 Armstrong, G. L., Taylorville.
 Aschauer, A. G., Springfield.
 Aschauer, H. A., Springfield.
 Ashley, Thad W., Springfield.
- Babeock, H. S., Danville.
 Babeock, O. B., Springfield.
 Bachrach, Benj., Decatur.
 Bacon, C. S., Chicago.
 Bacon, J. B., Macomb.
 Bacon, J. H., Peoria.
 Bain, Paul E., Pleasant Plains.
 Bain, W. G., Springfield.
 Baker, J. W., Decatur.
 Ball, A. W., Rushville.
 Ball, E. B., Quincy.
 Ballenger, W. L., Chicago.
 Barbour, E. E., Peoria.
 Barker, A. W., Springfield.
 Barr, D. D., Taylorville.
 Barringer, B. M., Emden.
 Barton, Francis W., Danville.
 Bascom, H. M., Peoria.
 Bath, T. W., Bloomington.
 Bauer, Emil F., Chicago.
 Baum, William L., Chicago.
 Baxter, A. C., Springfield.
 Baxter, A. J., Astoria.
 Baxter, G. E., Jacksonville.
 Beek, Joseph C., Chicago.
 Becker, Louis, Knoxville.
 Behrendt, E. A., Bloomington.
 Beifeld, A. H., Chicago.
 Beirne, H. P., Quincy.
 Bell, F. E., Mattoon.
 Bell, William H., Decatur.
 Bernard, E. L., Springfield.
 Berry, R. D., Springfield.
 Besley, Frederick A., Chicago.
 Betz, Hugo E., Chicago.
 Bing, E. A., Altamont.
 Binney, R. W., Granite City.
 Black, Carl E., Jacksonville.
 Blackburn, W. R., Virginia.
 Blaine, Walter C., Tuscola.
 Blakely, James T., Fairfield.
 Blakely, Osstella, Fairfield.
 Blankmeyer, H. B., Springfield.
 Blim, C., Crete.
 Bolling, Louis A., Kramer, Ind.
 Bondurant, Flint, Cairo.
 Boot, G. W., Evanston.
- Boswell, C. J., Mounds.
 Bourne, Nathan L., Decatur.
 Bounton, W. C., Waukegan.
 Bowcock, C. M., Springfield.
 Bowe, Edward, Jacksonville.
 Bowles, Marion K., Joliet.
 Bradley, M. M., Chatham.
 Bradley, Stephen C., Marshall.
 Brawley, Frank, Chicago.
 Bremerman, L. W., Chicago.
 Brennecke, H. A., Aurora.
 Brigham, C. R., Brookville.
 Brittin, A. L., Athens.
 Brittin, E. H., Auburn.
 Brittin, Wm. A., Virden.
 Brobeck, A. L., Hoopston.
 Broderick, F. W., Sterling.
 Brooks, E. W., Beecher City.
 Brown, C. B., Sycamore.
 Brown, Everett J., Decatur.
 Brown, L. S., Hillsboro.
 Buckmaster, F., Effingham.
 Buford, Coleman, Chicago.
 Bullard, Robert I., Springfield.
 Burgess, Walter, Pana.
 Burke, C. O., Atlanta.
 Burke, P. M., LaSalle.
 Burkhardt, C. F., Effingham.
 Burnham, A. F., Mason City.
 Burns, Howard, Carrollton.
 Burnside, L. A., Mt. Vernon.
 Burres, W. F., Urbana.
 Burroughs, Lay G., Collinsville.
 Burt, A. S., Momence.
 Butler, J. H., Hartsburg.
 Byford, Harry T., Chicago.
- Caldwell, C. B., Lincoln.
 Campbell, Jas. E., Peoria.
 Cantrall, J. W., Rochester.
 Capel, A. B., Shawneetown.
 Cappe, J. A., Chicago.
 Carlisle, J. W., Robinson.
 Carroll, C. L., Taylorville.
 Carter, Charles W., Clinton.
 Center, Chas. D., Quincy.
 Chapin, C. H., Weldon.
 Chapin, H. A., Whitehall.
 Chapman, W. D., Silvis.
 Christie, R. J., Quincy.
 Churchill, James F., Chicago.
 Cohenour, V. J., Joliet.
 Colby, C. P., Springfield.
 Cole, C. E., Jacksonville.
 Coleman, J. E., Canton.
 Collins, Clifford U., Peoria.
 Compton, C. W., Springfield.
 Cook, E. A., Alton.
 Cooley, E. B., Danville.
 Copenhaver, J. H., Bellflower.

- Corbus, B. C., Chicago.
 Corr, L. H., Carlinville.
 Corwin, A. M., Chicago.
 Cotton, A. C., Chicago.
 Coultas, R. J., Mattoon.
 Cowdin, Fred P., Curran.
 Craig, R. H., Charleston.
 Cravens, J. A., Greenfield.
 Crawford, C. E., Rockford.
 Crouch, E. L., Jacksonville.
 Culbertson, Carey, Chicago.
 Culbertson, F. D., Rushville.
 Cunningham, H. A., Salem.
 Curtis, W. H., Wilmington.
 Dalton, W. B., Scottville.
 Danford, R. C., Pana.
 Davidson, W. P., Sullivan.
 Ravis, Carl, Chicago.
 Davis, E. G., Lewiston.
 Davison, Charles, Chicago.
 Deal, D. W., Springfield.
 Deal, John, Riverton.
 Deal, John F. H., Springfield.
 Deichmann, O. H., Springfield.
 Denny, L. H., Gillespie.
 DeSilva, Joseph, Rock Island.
 Dewey, Grace, Jacksonville.
 Dice, H. F., Ridgefarm.
 Dixon, W. A., Decatur.
 Doan, T. D., Scottville.
 Dods, G. D. B., Chicago.
 Dowd, R. P., Fisher.
 Dowdall, G. G., Chicago.
 Duffield, H. T., Pittsfield.
 DuFour, W. G., Chenoa.
 Duncan, W. P., Jacksonville.
 Dunn, B. B., Perry.
 Earle, C. A., Des Plaines.
 Eckman, J. W., Winchester.
 Edmunson, O. B., Clinton.
 Egan, James A., Springfield.
 Egan, Thos. S., Mapleton.
 Ehresman, J. J., Carrollton.
 Eisendrath, Daniel N., Chicago.
 Elliott, C. A., Chicago.
 Elliston, L. B., Magnolia.
 Engelbretson, Ferd., Chicago.
 Epling, D. B., Petersburg.
 Eskey, F. W., Tuscola.
 Eustace, A. B., Chicago.
 Evans, F. N., Springfield.
 Evans, W. A., Chicago.
 Fairbrother, H. C., East St. Louis.
 Farrell, P. J. H., Chicago.
 Fenelon, J. H., Bloomington.
 Ferguson, E. C., Edwardsville.
 Fiegenbaum, E. W., Edwardsville.
 Fink, F. C., Pleasant Plains.
 Firebaugh, I. L., Robinson.
 Fisher, J. C., Decatur.
 Fitzpatrick, N. W., Decatur.
 Platt, Stephen, Hardin.
 Fleutje, Robt., Buffalo.
 Fletcher, F. D., Springfield.
 Fletcher, H. H., Winchester.
 Flint, O. J., Princeton.
 Floyd, Thos. W., Peoria.
 Foley, Edward A., Jacksonville.
 Foster, A. C., Decatur.
 Frank, Jacob, Chicago.
 Franke, W. E., Newton.
 Friduss, S. L., Chicago.
 Fuller, W. D., Chicago.
 Fulton, L. W., Alexander.
 Fuller, M. E., Wauconda.
 Gale, F. C., Pekin.
 Gardner, N. B., Loami.
 Gardner, W. H., Bloomington.
 Garm, R. H., Beardstown.
 Garrison, W. H., Pearl.
 Gatewood, Chicago.
 Gault, H. L., Sparta.
 Gehrman, A., Chicago.
 Gibson, E. P., Louisville.
 Gillespie, E. S., Wenona.
 Gillespie, T. W., Peoria.
 Gleeson, Benjamin, Danville.
 Glidden, S. C., Danville.
 Gobble, H. W., Greenfield.
 Godfrey, E. B., Springfield.
 Graham, D. W., Chicago.
 Graham, Ralph, Monmouth.
 Gray, W. L., Champaign.
 Gregory, A. R., Jacksonville.
 Griffiths, T. H. D., Springfield.
 Grinstead, W. F., Cairo.
 Guthrie, T. A., LaSalle.
 Gutting, W. V., Middletown.
 Hagan, Thos. A., Chicago.
 Hagans, F. M., Lincoln.
 Hagler, A. L., Springfield.
 Hagler, E. E., Springfield.
 Hairgrove, J. W., Jacksonville.
 Halbert, W. A., Springfield.
 Hall, O. O., Milford.
 Hamilton, J. W., Mt. Vernon.
 Hanna, R. A., Peoria.
 Hardesty, T. O., Jacksonville.
 Hardt, H. G., Lincoln.
 Harman, Chas. C., Chicago Heights.
 Harris, M. L., Chicago.
 Harsha, W. M., Chicago.
 Hart, S. P., Auburn.
 Harvey, H. M., Chicago.
 Harvey, W. F., Rushville.
 Hasson, Edward, Peoria.
 Hayden, A. A., Chicago.
 Heffermann, M. H., Decatur.
 Hellebrandt, P. J., Chicago.
 Herdmon, S. B., Taylorville.
 Herrick, James B., Chicago.
 Herrin, Philip, Villa Grove.
 Hill, T. F., Athens.
 Hill, G. E., Girard.
 Hill, H. C., Streator.
 Hill, J. H., Mechanicsburg.
 Hockman, B. F., Summer.
 Holben, R. E., Mt. Auburn.

Hovey, W. C., Nokomis.
Hudson, Ben, Palmyra.
Humiston, Chas. E., Chicago.
Hurst, S. T., Greenview.

Irwin, W. L., Plymouth.
Isman, Lawrence L., Chicago.

James, H. L., Springfield.
James, A. C., Springfield.
Jenkins, J. T., Carthage.
Jenks, F. H., Rockford.
Johnson, C. B., Champaign.
Johnson, L. H., Casey.
Johnston, C. R., Decatur.
Jones, Herbert C., Decatur.
Jones, Walter C., Chicago.
Jones, J. T., Salem.
Jones, Leroy, Hoopeston.
Jones, Solomon, Danville.
Jump, D. W., Plainfield.

Kanavel, A. B., Chicago.
Kauffman, J. S., Blue Island.
Kelly, J. W., Springfield.
Kelly, P. H., Chillieothe.
Kelly, P. M., Litchfield.
Kemp, C. H., Elmwood.
Keyes, A. Belham, Chicago.
Kimball, Z. V., Hillsboro.
King, C. B., Chicago.
King, C. D., Gillespie.
Kleekner, R. E., Mattoon.
Klein, Matthias J., Chicago.
Knapp, A. A., Peoria.
Knopf, S. A., New York City.
Knudson, T. J., Springfield.
Koessler, Carl K., Chicago.
Krafft, H. L., Peoria.
Kreider, G. N., Springfield.
Kretschmer, H. L., Chicago.

Lacy, L. S., Pittsfield.
LaDue, Burdette, Ottawa.
Lawler, T. A., Taylorville.
Leonard, E. F., Jacksonville.
Lesage, C. A., Dixon.
Lillie, C. W., East St. Louis.
Lindsay, L. N., Forsyth.
Lingle, W. E., Cobden.
Liston, J. B., Carlinville.
Little, E. O., Hume.
Lobdell, Effie L., Chicago.
Lockie, G. D., Springfield.
Lockwood, C. R., Kankakee.
Lockwood, E. K., Virden.
Lovell, Frank B., Gibson City.
Lowell, A. D., Chicago.
Luster, R. D., Granite City.
Lydston, G. Frank, Chicago.
Lyles, A. R., Virginia.
Lyon, G. E., Moweaqua.

Malcy, W. H., Galesburg.
Mammen, E., Bloomington.
Marshall, J. A., Pontiac.
Mason, Franklin, Rossville.

Mason, Jas. S., Urbana.
Mason, O. F., Springfield.
Matheny, R. C., Galesburg.
Matthews, J. P., Carlinville.
Mauers, Franklin, Springfield.
Mayes, W. E. G., Dawson.
Mayes, J. W. D., Illiopolis.
McCaughy, R. S., Hoopeston.
McClanahan, V. A., Viola.
McClelland, C. E., Decatur.
McClelland, R. A., Yorkville.
McClelland, S. E., Decatur.
McComack, J. L., Bone Gap.
McComas, C. A., New Canton.
McConnell, Robert J., Baylis.
McDavid, J. T., Decatur.
McDeed, W. G., Monticello.
McDonald, J. T., Mattoon.
McDonald, J. W., Aurora.
McElfresh, C. H., Springfield.
McKinney, F. J., Gifford.
McLaren, Frank, Whitehall.
McLaughlin, A. W., Chicago.
McMichael, O. W., Chicago.
McMillan, J. C., New Berlin.
McNeill, H. I., Newman.
McPherson, C. W., Hazelhurst.
McWilson, Eva, Manhattan.
Meirink, B. J., Germantown.
Melo, J. E., Peoria.
Mercer, Ray, Loraine.
Mereer, W. E., Liberty.
Mertz, A. A., Pawnee.
Metcalf, F. H., Franklin.
Metcalf, H. L., Springfield.
Mettler, L. H., Chicago.
Metz, Irving W., Springfield.
Middleton, A. B., Pontiac.
Miles, Walter, Viola.
Millard, H. A., Minonk.
Miller, C. H., Chicago.
Miller, J. Estill, Quincy.
Miller, J. T., Decatur.
Miller, Louis H., Pana.
Miller, R. B., Sullivan.
Milligan, Josephine, Jacksonville.
Milligan, C. W., Springfield.
Miner, Jas., Winchester.
Munnick, E. M., Mason City.
Mitchell, E. L., Monmouth.
Mitchell, H. C., Carbondale.
Mitchell, R. A., Marshall.
Mittan, F. J., Decatur.
Moler, R. L., Browns.
Montgomery, C. C., Lincoln.
Moore, Chas. P., Chicago.
Morgan, T. W., Virden.
Morey, L. L., Vandalia.
Morton, D. F., Taylorville.
Morrison, H. T., Springfield.
Morrison, W. S., Minonk.
Motley, E. G., Virden.
Motley, E. R., Virden.
Mudd, W. B., Athens.
Mundt, G. H., Chicago.

- Munson, S. E., Springfield.
Murfyn, W. D., Patoka.
Murphy, E. S., Dixon.
Murphy, J. C., Ridgway.
Nance, Willis O., Chicago.
Neal, J. R., Springfield.
Nelson, C. S., Springfield.
Newcomb, C. F., Champaign.
Newcomb, W. K., Champaign.
Nickerson, L. H. A., Quincy.
Niedringhaus, R. E., Granite City.
Niess, John, Carmi.
Noble, W. D., Chicago.
Norbury, Frank P., Springfield.
Norris, F. A., Jacksonville.
Norris, S. B., McClure.
O'Byrne, C. C., Chicago.
O'Hara, Fred S., Springfield.
Oliver, E. W., Peoria.
Oren, S. A., Lewistown.
Orndorff, B. H., Chicago.
Orr, L. E., Petersburg.
Osborne, John W., Champaign.
Ostrom, Louis, Rock Island.
Ottis, D. M., Springfield.
Owens, E. B., Dixon.
Oyler, H. S., Lincoln.
Page, J. F., Eureka.
Palmer, G. T., Springfield.
Palmer, M. J., Beardstown.
Parker, Chas. E., Sterling.
Parker, George, Peoria.
Parker, William, Mt. Sterling.
Parkes, Chas. H., Chicago.
Parkhurst, F. J., Danvers.
Parmley, J. G., Marion.
Parrish, M. P., Decatur.
Peacock, S. B., Baylis.
Pelton, Chas. L., Springfield.
Pelton, O. L., Elgin.
Pennington, J. R., Chicago.
Percy, N. M., Chicago.
Percy, J. F., Galesburg.
Perisho, E. E., Streator.
Pettit, J. W., Ottawa.
Petty, F. F., Chauncey.
Pfeiffenberger, J. M., Alton.
Phifer, F. N., Centralia.
Pitner, T. J., Jacksonville.
Plummer, S. C., Chicago.
Pogue, Jos., Edwardsville.
Pollock, H. L., Chicago.
Pollock, M. D., Decatur.
Preble, R. B., Chicago.
Price, C. E., Robinson.
Price, E. M., Astoria.
Price, J. R., Chicago.
Priest, T. W., Williamsville.
Prince, A. E., Springfield.
Punat, Edward, Chicago.
Purcell, A. C., Streator.
Rafferty, H. N., Robinson.
Rainey, G. S., Salem.
Ray, D. S., Cuba.
Rembe, Charles, Lincoln.
Rhodes, O. M., Bloomington.
Rice, J. H., Quincy.
Richter, H. M., Chicago.
Riggs, J. P., Media.
Ringnell, F. O., Moline.
Ritter, John, Chicago.
Rivard, G. J., Assumption.
Roan, C. F., Chicago.
Roane, J. Q., Carlyle.
Robison, John A., Chicago.
Robinson, J. W., New Berlin.
Robinson, S. T., Edwardsville.
Rockefeller, L. D., Bunker Hill.
Rogier, H. O., Mason City.
Rose, W. E., Vandalia.
Rosenow, E. C., Chicago.
Russell, F. H., Eldred.
Rutledge, J. A., Colorado Springs.
Ryan, C. T., Philo.
Ryman, H. D., Vernon.
Schneck, S. W., Mt. Carmel.
Schroeder, S. P., Nashville.
Schoemeshofer, Wm., Lostant.
Schreiber, G. F., Chicago Heights.
Schweer, J. L., Beardstown.
Scott, J. W., Veniee.
Schwengerdt, W. E., Champaign.
Seidel, A. W., Chicago.
Seippel, Clara P., Chicago.
Selby, D. E., Chicago.
Senn, E. J., Chicago.
Shallenberger, W. E., Canton.
Shastid, W. E., Pittsfield.
Shearl, J. M., Middletown.
Sibley, Frank C., Carmi.
Sibley, W. C., Fairfield.
Sidley, Frederick K., Peoria.
Sihler, G. A., Litchfield.
Simmons, A. H., Girard.
Simpson, J. P., Palmer.
Sippy, Bertram W., Chicago.
Sloan, E. P., Bloomington.
Sloan, John F., Peoria.
Smith, C. F., Kankakee.
Smith, D. G., Elizabeth.
Smith, H. W., Roodhouse.
Smith, J. W., Bloomington.
Smith, S. A., Lincoln.
Smith, W. H., Godfrey.
Snell, M. W., Litchfield.
Solliday, M. H., Taylorville.
Solyers, J. O., Springfield.
Songer, F. S., Kimmunity.
Southwick, G. E., Chatham.
Spindel, E. S., Springfield.
Spurek, M. D., Peoria.
Stealy, J. H., Freeport.
Stein, Otto J., Chicago.
Stericker, G. F., Springfield.
Stewart, H. J., Kewanee.
Stewart, J. H., Exeter.
Stremmel, S. C., Macomb.

- Strouse, Solomon, Chicago.
Suker, G. F., Chicago.
Swenson, C. G., Chicago.
Tankersley, Geo. A., Owanceco.
Tarnowsky, de Geo., Chicago.
Taylor, C. M., Bethany.
Taylor, G. G., Elkhart.
Taylor, I. H., Springfield.
Taylor, J. L., Springfield.
Taylor, L. C., Springfield.
Taylor, Percy L., Springfield.
Thomas, Chas. D., Peoria.
Thompson, O. M., Ellsworth.
Thompson, P. C., Jacksonville.
Thornton, C. M., Royalton.
Tice, Frederick, Chicago.
Titterington, M. B., Jerseyville.
Tynen, R. J., Chicago.
Trapp, A. R., Springfield.
Turner, A. F., Taylorville.
Tuttle, H. H., Springfield.
Twitchell, James W., Belleville.
Uehren, W. A., Aurora.
Vadakin, J. H., Bethany.
Van Derslice, J. W., Chicago.
Van Meter, E. R., Fancy Prairie.
Van Winkle, J. W., Chicago.
Wagner, Carl, Chicago.
Wall, A. S., Champaign.
Walsh, E. A., Springfield.
Walsh, J. H., Chicago.
Walters, J. C., Springfield.
Walton, J. W., Clay City.
Ward, H. B., Urbana.
Warne, F. C., Chicago.
Washburn, G. N., Peoria.
Webster, G. W., Chicago.
Webster, E. M., Chicago.
Weir, S. W., Marshall.
Weis, E. W., Ottawa.
Welch, J. W., Cuba.
Wells, C. A., Quincy.
Welsh, M. M., Odell.
Welton, C. B., Peoria.
West, Hyde, Taylorville.
Whalen, Chas. J., Chicago.
Wheeler, Herbert, Grant Park.
White, J. V., Auburn.
Whitefort, A. R., St. Elmo.
Wiener, A. C., Chicago.
Wiggin, J. L., E. St. Louis.
Wilbur, F. M., Riverton.
Wilcox, J. M., Clinton.
Wilhelmy, C. F., Decatur.
Wilkinson, C. E., Danville.
Wilkinson, G. E., Alton.
Will, O. B., Peoria.
Wilson, J. F., Versailles.
Windmueller, E., Woodstock.
Wolfe, H. M., Taylorville.
Woltmann, H. C., Jacksonville.
Wood, C. M., Decatur.
Wood, Casey A., Chicago.
Wood, Harry, Batchtown.
Wood, W. C., Decatur.
Woodruff, Harry W., Joliet.
Woodruff, Thomas A., Chicago.
Woods, A. N., Chicago.
Woodward, C. E., Decatur.
Wright, C. D., Springfield.
Wright, Harry G., DeKalb.
Wright, L. D., Rochester.
Wright, N. A., Manito.
Yarno, R. S., Chicago.
Yeck, C. W., Paunee.
Yoder, Henry L., Morton.
Yolton, R. G., Bloomington.
Young, J. G., Pontiac.
Young, W. A., Springfield.
Zinser, H. A., Washington.
Zorger, A. L., Champaign.
Zurawski, J. A., Chicago.

NEWS OF THE STATE

NEWS ITEMS

—Dr. Thomas F. Neil, of Sligo, Pa., was named on the staff of the Watertown Hospital.

—Dr. Orville Wilhelmy, of La Place, has sold his practice to Dr. Curtis A. Humaker, of Anna, and will locate in Colorado.

—Dr. Thomas J. Balhatchet, of Chicago, it is said, has been haled to court on the charge of performing an illegal operation.

—Dr. E. L. Crouch, of Maple Grove Sanitarium, Jacksonville, has purchased a small farm in that city to be used presumably for sanitarium purposes.

—Dr. Henry T. Rupp, of 330 South Campbell Avenue, Chicago, was arrested August 6 on a warrant charging him with operating a confidence game.

—Dr. G. C. Couch, who for the past several years has been practicing at Friendsville, will move to Mt. Carmel, where he will engage in the practice of medicine.

—Dr. S. O. Eads, of Decatur, will quit practice in that city on October 1, and move to Danville, Ky., where he will cultivate a farm of 345 acres purchased at the price of \$140 per acre.

—Dr. George H. Rue, of Lexington, McLean County, has recently sued the Wabash Railroad for \$10,000 for personal injuries received while accompanying two cars of cattle to St. Louis.

—Dr. J. R. Rigg will retire from active practice the first of August, and his partner, Dr. Connolly, will have charge of the practice from then on. Dr. Rigg will continue to make Mt. Pulaski his home.

—Dr. Clara Hayes, recently granted a physician's license by the state board of health, has been appointed by the civil service commission as a member of the medical staff of the Peoria State Hospital.

—The Christian County Medical Society has sent a communication to the Board of Supervisors disapproving of the practice of calling on physicians and surgeons outside the county to give attendance to county patients.

—Dr. W. H. Fitch, of Rockford, while on a pleasure trip in New Mexico, had the misfortune of fracturing a leg. The accident was caused by the team of horses which he was driving becoming frightened and throwing him out.

—One S. R. Chamlee, a cancer specialist with offices at 36 West Randolph Street, Chicago, who was practicing without a license, has been found to maintain a hospital at 3055 Fulton Street that city, and is under investigation by the health department of Chicago.

—Seth Marion Wells, an itinerant medical practitioner, who has been "working" Quincy with the aid of the *Daily Whig and Journal*, and a negro minstrel show, has been summoned to show cause why his outfit should not be broken up.

—The Lincoln Woman's Club has issued its program of the seventeenth annual course of lectures as follows: October 13, Sex-hygiene, Dr. Bertha Anderson; January 8, Heredity, Dr. Clara Towne; February 5, Eugenics, Mrs. W. R. Whetsler.

—Dr. Walter Nason, of Ashkum, has sold his practice and will devote his time to managing a land project in Canada. Dr. Bemisderfer has returned from California and bought the practice of Dr. Nason, of Ashkum. He formerly practiced at Monee.

—Miss Casey, superintendent to the Bethea Hospital, Dixon, has resigned her position. Many rumors are current as to the breaking of the rules of the institution by physicians who had cases at the hospital and of Miss Casey's efforts to protect the student nurses. Miss Casey has been superintendent for two years.

—According to plea filed with County Clerk at Elgin, the ballots of the last general primary in Kane County are reeking with diphtheria germs, and a recount might cause an epidemic throughout the county. The plea sets forth the fact that Edward Harvey, a judge of the election at LaFox, died two days after the election, of diphtheria.

—The Rock Island Commissioners have taken steps for the establishment of a tuberculosis sanitarium in that city provided for by a vote of the people two years ago, authorizing a special tax levy. A committee of three physicians will be named to act with the city physician, Dr. G.G. Craig, in recommending a site for the new institution.

—Since July 1, the following articles have been accepted for inclusion with new and nonofficial remedies:

Urethral Suppositories Adrenal Comp. (H. K. Mulford Co.).

Vaginal Suppositories Adrenal Comp. (H. K. Mulford Co.).

Adrenal Comp. Lozenges (H. K. Mulford Co.).

Adrenal Ointment (H. K. Mulford Co.).

Adrenal Rectal Suppositories 5 grs.

—Dr. George P. Caldwell is said to have been the first physician locating in Madison County. His home, now the present limits of Granite City, was established in 1802. Madison County at that time embraced practically all the present boundary of Illinois. Dr. Caldwell came from Kentucky, and was one of the United States Senators elected when the state was admitted to the Union in 1818. He died in Morgan County, Aug. 1, 1846.

—Dr. Abraham Jacobi, of New York, says: A physician does right to place his best energies in the duties of his profession, but his real and foremost duty is to his country. In the strain and hurry of the modern doctor's life he has little time left to take an interest in public life. But the time has come when we in the profession must express ourselves and enter into the public life of the nation. We should use our influence and knowledge when legislation is needed in the interest of the public

health. Legislators lack the knowledge that some physicians have, and it is at this time that physicians should step in and offer the benefit of their knowledge. In this respect physicians should work for everything that in the broadest sense will make for the health of the nation. I am interested and appreciative of the need of the reforesting of the open lands of the country. Physicians can aid in legislation which will bring this about.

—The initial number of the *Bulletin* of the Fox River Valley Medical Society breezed into our office with a most readable account of doings along the Fox. The publication committee, composed of Drs. A. L. Mann, Elgin; J. H. MacDonald, Aurora, and R. G. Scott, Geneva, deserve credit for an interesting and up-to-date bulletin. The August number contains an announcement of a joint picnic to be held at Mill Creek, August 28, by the Aux Plaines Branch of the Chicago Medical Society and the Fox River Valley Medical Society. A chicken dinner will be followed by the following papers: "Undescended Testicle," Thos. I. Motter, Oak Park; "Etiology, Pathology and Treatment of Summer Diarrhea," James W. VanDerslice, Oak Park; "Trichiniasis," Emil Windmueller, Woodstock; "Myositis Ossificans with Report of Case," A. R. Reeder, Aurora; "Hemorrhagic Diseases of the New-Born," A. F. Krueger, Chicago.

—Down at Wauconda, Ill., the people are doing an unusual and commendable thing. They are raising money to erect a monument to Doc Dawson, for many years the great man of that little city. Not that Doc held an especially high rank as a physician, nor that he ever discovered any revolutionary cures or principles of medicine. He was a plain, every day sort of Doc, and the fact that he lived alone with a dog for his only "family" indicates his lack of social ambition. Doc's immortality rests on the fact that he never charged a fee for his services. When a patient was able and felt inclined to pay, Doc allowed him to do so, according to value received. But the poor and needy never paid tribute to his skill, and never lacked for his services when they were required. Balzac has devoted a great book to a physician of this type and the story of Doc Dawson would doubtless prove interesting material for a worthy author. Incidentally, there are a great many more physicians in this world with a touch of Doc Dawson in them than the average man realizes. The doctor with the exorbitant bill is standard joke material, but he is mostly exaggeration, like all other jokes. But only a few of us stop to think of this side of the case when we are ill.—*Peoria Journal*.

—A chiropractor by the name of L. G. Brown was found guilty by a jury in a justice court in Quincy. It took the jury three hours to decide the case, although it had been clearly shown that Brown practiced without a license, and charged for his services. The *Quincy Herald* makes the following comments on the case which are of interest, showing the opinion of the laymen in such a case:

"The jury deciding the case was out three hours and it is understood at one time nearly half of them stood in favor of acquittal. While none of the jury seemed to have much faith in the school of treatment which

the doctor represented, it was felt that he was sincere enough in believing that he was practicing legitimately, and hence he should not be made responsible for the fine. However, argument of those who felt that the presence of unlicensed practitioners of any sort was harmful to the community induced a verdict finding Dr. Brown guilty, and the report was made shortly after 9 o'clock and the jury excused. The first ballot stood 8 to 4 for conviction, the third 7 to 5, the ninth 9 to 3, then 10 to 2, and the twenty-first 11 to 1. It was unanimous on the twenty-second.

"The defense immediately announced their intention to appeal the case, and an appeal bond of \$300 was immediately provided. The appeal will be heard before the October term of the circuit court. Lieutenant Governor Morris of Wisconsin, who is here as chief attorney for the defense, will come again to defend Dr. Brown in the circuit court. He has been chief counsel for the United Chiropractors' Association for a number of years, and yesterday conducted the defense with what otherwise would have been dignified and proper legal procedure, had not several of the medical witnesses persisted in treating the whole affair as a joke. At least two of the physicians called by the plaintiff as witnesses apparently forgot that they were simply witnesses in a legal proceeding, and that all they were required to do was to answer questions put to them by the attorneys, and they either refused to give sensible answers to many of the scientific questions propounded by Governor Morris, or else answered in insulting and sarcastic manner. The demeanor of Governor Morris under these trying circumstances was gentlemanly and commendable, and there is little question but that the tactics pursued by some of the doctors was one of the elements which contributed to the unwillingness of several of the jurymen to return an unfavorable verdict.

"Such answers as were given by the doctors as witnesses would never be tolerated in a court of record. One doctor, evidently angered, declared in a most insulting way that there was only one disease known to the medical world for which there was an absolute and specific cure, and that was the disease of Personal Ego which afflicted practitioners of new and strange schools of healing, and some attorneys, especially those defending such practitioners. When asked the remedy, he replied, 'The electric chair.'

"In his argument to the jury, Attorney Gilmer declared that Dr. B. F. Palmer of Davenport, head of the college wherein there are 500 students of chiropractic, was the most dangerous man in Iowa out of a prison cell. He declared that he was insane, a paranoiac, a man whose irresponsibility was criminal. In his closing argument Attorney Gilmer was even more vehement. Attorneys Ellermeier and Morris made extended arguments.

"The crowd was large in the morning and even larger in the afternoon, and quite a number of people remained at the court-room even until the verdict was received."

The defense placed only one witness on the stand, Dr. B. F. Palmer. He is at the head of an institution at Davenport, attended by 500 students of chiropractic. His father was the originator of the system of treatment. He himself has practiced for sixteen years. He stated that chiropractic was a new science, based on the principal that what is generally understood as disease is the result of subluxation of the vertebræ of the spine. Chiropractic does not use drugs. All that it does is to adjust the spine to a normal condition to relieve the pressure upon the nerves, and then let nature furnish a cure. He stated that subluxations range from a minimum of one 1,600th of an inch to one-quarter of an inch. These are detected by the sense of feeling of the chiropractor and with instruments for measurements.

PERSONAL

Dr. E. A. Fischkin, Chicago, sailed for Europe about September 1.

Dr. B. Barker Beeson, of Chicago, has returned from a trip to Vienna.

Dr. L. T. Gregory, of Lovington, will take charge of a book store in that city.

Dr. L. A. Glaze, of Rayville, was recently operated on at East St. Louis for gall-stones.

Dr. W. G. Murray, of Springfield, has taken a position in the State Hospital at Kankakee.

Dr. Theodore B. Sachs has resigned as Physician in Chief of the Chicago-Winfield Sanatorium.

Dr. W. H. McCandless will locate in Sterling, and occupy the office of the late Dr. Crandall.

Dr. Homer Little, of East St. Louis, will build a modern residence on State Street of that city.

Dr. R. E. Kleckner, of Mattoon, will soon leave for Europe to pursue a year's course of study in Vienna.

Dr. E. F. Neal, of Elgin, and his bride, formerly of Wabash, Ind., have returned from their honeymoon.

Dr. G. W. Brock, assistant physician at the Peoria State Hospital, has resigned to enter private practice.

Dr. C. B. Caldwell has been reinstated at the Lincoln State School and Colony as assistant superintendent.

Dr. A. H. Dollear has resigned from the staff of the Kankakee State Hospital to take special work in Chicago.

Dr. Howard D. Child, Franklin, N. H., has been appointed assistant physician at the Kankakee State Hospital.

Dr. T. J. Schweer, of Beardstown, returned July 29 from a 3,000 mile auto trip to Ohio, Indiana and New York.

Dr. Anna Peterson, of Chicago, has been assigned temporarily as graduate nurse to the Kankakee State Hospital.

Dr. John B. Ellis, of Chicago, has been appointed consulting ophthalmologist to the State Training School for Girls.

Dr. Watson Gailey, of Bloomington, will leave in November for Europe, where he will take up the study of surgery.

Dr. Louis H. Athon and Dr. Earl B. Jewell have been appointed assistant physicians at the Kankakee State Hospital.

Dr. J. C. Halloway, of Galesburg, was recently compelled to undergo a surgical operation, which seems likely to prove successful.

Dr. Ruth Alexander, of Southern Indiana Hospital for Insane, has been appointed assistant physician in the Lincoln State School and Colony.

Dr. Barnet Lemchen has been appointed assistant physician at the Anna State Hospital, and Dr. Drury L. Fish at the Kankakee State Hospital.

Dr. Elizabeth D. Carroll, assistant physician at the Peoria State Hospital, has been transferred to the staff of the Jacksonville State Hospital.

Dr. Charles Ricksher, of the Psychiatric Institute, Wards Island, New York, has been appointed as assistant physician at the Kankakee State Hospital.

Dr. Charles R. Lowe, of Ann Arbor, Mich., and Dr. W. Hall Crutcher, of Palmer, Neb., have been elected assistant physicians at the Kankakee State Hospital.

Dr. F. W. Nickel, physician in the Illinois School for the Deaf, and the Illinois School for the Blind, and laboratory assistant at the Jacksonville State Hospital, has resigned.

Dr. Thomas S. Crowe, of Chicago, whose connection with the staff of Cook County Medical Department was a subject of recent criticism, has started for Europe to be gone six months.

Dr. F. J. Sullivan has been authorized to act as assistant superintendent at the Kankakee State Hospital during the absence of Dr. S. D. Wilgus and assistant superintendent C. F. Read.

Dr. F. J. Eberspaecher, of Pana, writes that he does not expect to return to that city before the first of March, thus lengthening his visit by three months beyond the time he had originally expected.

Dr. G. W. Brock, who recently resigned from the staff of the Peoria State Hospital as assistant physician, has returned to the service with appointment in the same rank in the Kankakee State Hospital.

Dr. L. C. Miller, of Champaign, will go to Chicago the first of October, where he will take postgraduate course in the College of Medicine. During his absence his practice will be attended by Dr. V. C. Morton, of Peoria.

Dr. Eugene Cohn, assistant superintendent of the Peoria State Hospital, has enjoyed a leave of absence to study surgery at St. Mary's Hospital at Rochester, Minn. During his absence Dr. E. C. Levitin of the Peoria State Hospital staff acted as assistant superintendent.

Dr. Clara Harrison Towne, psychologist at the Lincoln State School and Colony, has been directed by the State Board of Administration to visit the schools under the jurisdiction of the Board for the purpose of making an inspection of the methods of teaching and the character of the pupils, and to make such recommendations as she may see fit.

REMOVALS

Dr. V. C. Morton has removed from Peoria to Rantoul.

Dr. A. P. Kittle of Wakefield has removed to Newton, Ill.

Dr. R. G. Dakin has removed from Magnolia to Waterloo, Iowa.

Dr. Wm. R. Mangum has removed from Maryville to Bridgeport, Ill.

Dr. E. A. Weisenhorn, formerly of Quincy, has removed to Teutopolis, Ill.

Dr. C. M. Riley of Alton has removed to 3945 Magnolia avenue, St. Louis, Mo.

Dr. John F. Beatty has removed from Granite City to Everett, Washington.

Dr. William V. Secher, for many years a practitioner of Tolono, Ill., has removed to Urbana.

Dr. F. Willard Brown, of Knoxville, Iowa, has removed to Dwight, Ill., where he will practice his profession.

Dr. H. A. Berry, of East Lynn, has removed to Elk City, Okla., where he will resume the practice of medicine.

NEW INCORPORATIONS

Ziegler Hospital Association, Chicago, \$6,000; care for sick. Robert H. Zoller, Andrew J. Ryan and Daniel S. Jerka.

United States Goitre Remedy Company, Chicago, \$1,000; deal in medical remedies. Incorporators, Albert S. Louer, D. Hollinghausen and C. D. White.

PUBLIC HEALTH

—Brill's disease—nothing more or less than a very mild type of typhus fever—is known to be endemic in certain cities of the United States. We know of no cases present in Chicago but, owing to the lack of familiarity with this disease on the part of physicians generally and in consideration of the very mild character of the cases elsewhere recognized, it is not impossible that unrecognized cases of this disease may now be or lately have been in existence in this city. The importance of early recognition of the disease and the prompt inauguration of measures for the prevention of its spread causes the Department to issue this note of warning and information to physicians of Chicago and vicinity. That no undue alarm may arise from this notice let us again emphasize that the type of the disease is of an extremely mild character, a fact which is fully borne out by the experience of Dr. N. E. Brill of New York, who has observed 255 cases in that vicinity without a single death. In fact the disease was so mild in character that it was not positively recognized as the dreaded typhus fever until experiments conducted by Drs. Anderson and Goldberger of the U. S. Hygienic Laboratory, Public Health and

Marine-Hospital Service, Washington, D. C., proved it so to be. Typhus fever is a disease of the very poor and the personally unclean. It thrives best in dirty, overcrowded and otherwise insanitary quarters, and it has been quite conclusively demonstrated that the infection is borne from one individual to another by the body louse, and possibly by the head louse. Dr. Brill has seen but two cases among the well-to-do classes. Dr. Brill's general description of the disease is as follows: "It begins rather suddenly, often by a distinct chill or chilly sensation. This is followed by general body pains and a headache of increasing agonizing severity. Fever develops quickly, the temperature reaching its maximum on the third day, after which it remains fairly constant, averaging between 103 and 104, occasionally as high as 106. The patients are much prostrated, and, in some, apathy is a prominent feature. On the fifth or sixth day of the disease an eruption appears, which is rather characteristic, and differentiates the disease from most other infectious disease. This eruption is fairly profuse, but discrete, consisting of a maculopapular rash, dull red in color, erythematous in character; the spots are irregular in outline, though usually ovoid, 2 to 4 mm. in diameter. Under pressure a spot may be caused to fade, but it cannot be obliterated, thus showing an evident escape of some of the blood-contents of the capillaries into the surrounding dermal tissues. Sometimes the spot becomes distinctly hemorrhagic (petechia). They appear on the trunk and extremities, even rarely on the palms and soles. The eruption is never profuse as in measles, sometimes even being scanty, then showing less than one hundred individual spots, which may be fairly well scattered over the trunk, arms and buttocks, and along the sides of the thighs. The eruption is permanent until the end of the disease; it does not appear in crops, but develops and reaches its full efflorescence within twenty-four hours after the first spots appear. The disease lasts twelve to fourteen days, when the fever suddenly declines, in many cases with a critical fall in temperature, which may come to normal within twelve hours; in others, with a rapid lysis within thirty-six hours, and in a few, with lysis extending over a period of sixty hours. With the fall in temperature the agonizing headache disappears, the spots rapidly fade, leaving within a few hours only brownish-yellow stains on the skin, sometimes disappearing altogether within twenty-four hours thereafter. Convalescence is speedy. In a few cases rigidity of the neck and Kernig's phenomena appear. The urine in most cases shows a trace of albumin and hyalogramgranular casts. The white blood count averages 11,000 cells. The blood shows no power of agglutinating any of the organisms of the typhoidal group. Blood cultures are absolutely negative. Children are but rarely affected, the age of most common occurrence being from twenty to forty years. The sexes are about equally affected. There seems to be no distinct seasonal incidence." Physicians are urged to promptly report to this department all suspicious cases coming under their notice.—From *Bulletin Chicago Department of Health*.

MARRIAGES

SIMON H. SOBOROFF, M.D., to Miss Rebecca Soboroff, both of Chicago, June 25.

E. V. D. MORRIS, M.D., to Miss Mary Oppie, both of Galesburg, Ill., August 19.

HENRY JOHN PLENZ, M.D., to Miss Margaret Schultheis, both of Chicago, July 5.

ERNEST MONROE HARTFIELD, M.D., to Miss Marie Gabbert, both of Chadwick, July 7.

EDWIN VAIL LAPHAM BROWN, M.D., to Miss Frieda Kirchhoff, both of Chicago, August 10.

HOLLIS ELMER POTTER, M.D., Chicago, to Miss Blanche Morse of Dillon, Montana, July 24.

THOMAS WILLIAMS LEWIS, M.D., Chicago, to Miss Mamie B. Fauntleroy, at Lynchburg, Virginia, July 11.

Rev. Victor W. Dorris, an evangelist, and NETTIE AUSTIN MURPHY, M.D., a practicing physician, both of Paris, Ill., were married in the parlors of the Plaza Hotel, Monday, August 19.

JAY T. WOOD, M.D. of Springfield, Ill., and Miss Charity Coe, of Rochester, Ill., were secretly married on the 6th of April, at Pontiac. Dr. Woods and wife have located at Chicago, where he will take up the practice of medicine.

DEATHS

R. M. FULKERSON, M.D., died suddenly at his home in Mounds, Ill., Aug. 11, 1912, at the age of 65 years.

LAWRENCE B. GLAZE, M.D., of Grayville, Ill., died at the Henrietta Hospital, East St. Louis, Aug. 12, 1912, following an operation for cancer of the liver; age 60.

EDWIN SYLVESTER SWISHER, M.D., New York University, New York City, 1876; of Socorro, N. M.; formerly of Canton, Ill.; died in Kansas City, August 1, from heart disease.

F. J. BEAL, M.D., who was born and raised in Arcola, and afterward became a professor in the New York Polyclinic, died in the hospital of that institution in New York recently; age 44.

WILLIAM A. BROWN, M.D. (license, Illinois years of practice, 1878), for several years a practitioner of Danville, Ill., died at his home in Los Angeles, Cal., July 25, from senile debility; age 82.

SILAS TALBERT YOUNT, M.D., Bellevue Hospital Medical College, 1876; formerly of Lafayette, Ind., but for twenty years a resident of Chicago, a specialist in nervous and mental diseases, died in St. Luke's Hospital in that city, August 6, from myocarditis; age 56.

LEWIS H. WATSON, M.D., Eclectic Medical Institute, Cincinnati, 1867, of Chicago, died at the Columbus Hospital in that city, August 13, after an operation for disease of the kidney; aged 70.

ROBERT HILTON WALCH, M.D., Illinois Medical College, Chicago, 1897; for several years a member of the faculty of his alma mater, died at his home in Chicago, August 12, from heart disease; aged 59.

GALLOWAY TRUAX, M.D., Castleton (Vt.) Medical College, 1849; for many years a practitioner of Maquoketa, Ia.; died at the home of his son in Chicago, July 27, from pleurisy; aged 86.

WILLIAM SEYMOUR JOHNSON, M.D., Hahnemann Medical College, Chicago, 1868; one of the oldest homeopathic physicians of that city; a veteran of the Civil War; died at his home, July 27, from cerebral hemorrhage; aged 82.

D. E. BURLINGAME, M.D., of Elgin, died Aug. 4, 1912; aged 70. The doctor practiced in Elgin for forty-five years.

G. H. RUE, M.D., of Lexington, died Aug. 5, 1912, as a result of injuries received in a railway wreck, two years ago; he was born in New Jersey in 1848, graduated from Hahnemann Medical College, Chicago, and had practiced in Lexington for twenty-eight years.

FREDERICK BRENDAL, M.D., of Peoria, died August 10, at the age of 92. He has been living in retirement at the home of his son-in-law for thirty years; he was born at Ehrlangen, Germany, in 1820; graduated in medicine in that country, and was an active figure in the Revolutionary movement of 1849. His body was cremated at Davenport.

JOHN E. SAWYER, M.D., Hahnemann Medical College, Chicago, 1884; for a number of years a practitioner of New Richmond, Wis.; St. Paul, Minn.; Colorado Springs and Chicago; died recently at his home in Chicago of heart disease; aged 57.

JOHN W. AIKEN, M.D. (license years of practice, Illinois, 1878), for more than half a century a practitioner of Tennessee, Ill., died in the Marietta Phelps Hospital, Macomb, Ill., July 25, from cerebral hemorrhage; age about 80.

JOHN WILLIAM RIGHEIMER, M.D., College of Physicians and Surgeons, Chicago, 1910; head intern of the St. Anthony De Padua Hospital, Chicago; died in Garrett, Ind., July 12, from ptomain poisoning; aged 24.

Book Notices

PRACTICAL ANATOMY. By John C. Heisler, M.D., Professor of Anatomy in the Medico-Chirurgical College of Philadelphia. With 366 illustrations, of which 225 are in color. J. B. Lippincott Company, Philadelphia and London. Price \$4.50.

Professor Heisler has issued this guide in a convenient form which must appeal to all students in the dissecting room. It is in fact a small edition of the excellent Piersol's Anatomy, and for the average physician contains all the matter necessary for use in general practice. One hundred and seventy-one of the three hundred and sixty-six illustrations are made specifically for this work, and add greatly to its value.

THE SURGICAL CLINICS OF DR. JOHN B. MURPHY OF MERCY HOSPITAL, CHICAGO. Volume 1, No. 2.

The second number of Dr. Murphy's Clinics continues the high standard set by the first number, and places before the general practitioner in the most instruc-

tive way a great deal of valuable information. As we have said before, no surgical practitioner in the world has greater skill as a teacher, and the fact that Dr. Murphy has a wonderful variety of cases appearing in his clinics, makes the products of his pen of supreme importance. We understand that the surgical clinics have been in great demand and trust that they will be read by all readers of THE JOURNAL.

THE PITUITARY BODY AND ITS DISORDERS. Clinical States Produced by Disorders of the Hypophysis Cerebri. By Harvey Cushing, M.D., Associate Professor of Surgery the Johns Hopkins University, Professor of Surgery (elect) Harvard University. J. B. Lippincott Company, Philadelphia and London. Three hundred and nineteen illustrations. Price \$4.00.

This amplification of the Harvey Lectures delivered before the New York Academy of Medicine in 1910, is a noteworthy contribution to medical science. It opens up an entire new field of study, and Dr. Cushing has undoubtedly done some excellent work in considering these long neglected cases. No doubt it will soon be found that diseases of pituitary bodies are as important and nearly as frequent as are the diseases of the thyroid. No better proof of the value of the instruction given at Johns Hopkins University could be found, than is contained in the 340 pages of this remarkable work, which should be in the hands of every up-to-date practitioner in Illinois.

PHARMACOLOGY AND THERAPEUTICS. By H. C. Wood, Jr., M.D., Professor of Pharmacology and Therapeutics in the Medico-Chirurgical College; Physician to the Medico-Chirurgical Hospital; Second Vice-Chairman of the Committee of Revision of the United States Pharmacopeia. J. B. Lippincott Company, Philadelphia and London. Price \$4.00.

Dr. Woods, who we believe is the third generation of writers of this name on this subject, has brought before his readers the extraordinary advancement in Pharmacology in the last 20 years. He believes that today this department of medical knowledge, which was formerly a jumble of isolated facts, is an orderly science. Our knowledge of the changes produced by drugs in the bodily function has been enormously increased, but more important than this expansion in our information as to what drugs do, is the fact that we are beginning to understand how they do it, and thereby to be able to correlate the facts of drug action. The present conception of pharmacology is utterly different from that of a generation ago.

The author feels equally strongly that pharmacology is of no value to the medical student save as a basis for practical therapeutics, and the more clearly the student can be made to perceive the relation between pharmacologic science and the clinical employment of drugs for the relief of human suffering, just so much more valuable will his pharmacology become to him, and the more successful will be his future therapeutics.

The work contains over 400 pages and should be read from cover to cover. One familiar with the principles of therapy which are here discussed has no temptation to prescribe proprietary remedies.

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ORIGINAL ARTICLES

MEANS FOR THE ACCURATE DETERMINATION OF HUMAN INTERNAL PARASITES *

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URBANA, ILL.

Hardly half a century has elapsed since the pioneer investigations of Pasteur, Virchow and their confrères laid the foundations of bacteriology. Within this short period a science has been built up and a multitude of workers drawn into its service. Methods of technic have been developed, means for the differentiation of germs, and for the positive determination of their relation to disease worked out, and processes evolved for limiting the activity or destroying the life of disease-producing organisms, and for utilizing the activities of those species which are helpful to man in one way or another. The splendid results achieved in this field, especially in the cure and prevention of disease, have served to obscure the well recognized fact that bacteria are not the only disease-producing organisms.

Within very recent years, however, the discovery of important causes of disease in the animal field has accentuated the need of some reliable basis in knowledge or technic for diagnosing accurately the animal organisms related to disease. Such a determination falls within the field of clinical microscopy and constitutes an evidently important section of that field. In spite of its importance, however, this study has been seriously neglected and men of scientific training and habits have been contented with a rough approximation or even with a guess at the character of parasitic material which has presented itself in the course of clinical examinations.

How scanty the knowledge of this field and how low the standards which seem to satisfy even the better class of workers is evidenced by

* Contributions from the Zoological Laboratory of the University of Illinois. No. 16.

* Read at the Sixty-Second Annual Meeting of the Illinois Medical Society, at Springfield, May 21-23, 1912.

the publication recently in one of our foremost medical journals of a cut representing the seat worm of man (*Oxyuris vermicularis*), which would not be accepted from a freshman in any reputable college course in zoology. Now an atrociously poor figure of this well-known parasite is indeed only a sad comment on the standards of author and editor, for it will hardly lead to erroneous diagnosis or faulty treatment. But in many cases the reverse is true. Errors in observation and delineation, faulty descriptions of structure and incorrect measurements, have resulted in confusing forms of very different clinical importance and in concealing the presence of new and dangerous human parasites.

The history of the hookworm in this country is a striking instance of another serious phase of the situation, namely, the lack of attention to the possible presence of parasitic organisms, which is, of course, even more fatal than lack of accuracy in their determination. But that may be regarded as a passing phase of the medical situation. Many are already fully alive to the possibilities in unexplained etiology and are searching diligently for an explanation in the form of some unrecognized parasite, either animal or plant. We need then to seek to furnish the correct data for use in diagnosis rather than to devote our time to laying further emphasis on the need of searching carefully for evidence of animal parasites in all cases. It has been in part no doubt the lack of such data which has necessitated the general diagnosis of "worms," when a determination of the particular species would have been more to the point. Moreover, the unfamiliarity with such organisms and the criteria for distinguishing them from each other and from extraneous substances has certainly led to frequent misinterpretation of harmless residual food materials as dangerous parasites, or vice versa, to the failure to recognize parasites which were abundant and significant. To sum up then this phase of the discussion: The physician must first of all look for parasitic organisms of the animal type as well as those of plant nature, and in the next place it is equally important that he be able to determine the nature of the material that comes within his notice.

How may this be done? Evidence of the presence of parasites will be obtained by an examination of the blood, the sputum, the urine, or the feces. The first three are frequently examined to-day in the diagnosis of disease and furnish only rarely any evidence of parasites. In the blood one may find the malarial organism (*Plasmodium*) of several species, flagellate organisms (*Trypanosoma*) or larval nematodes (*Microfilaria*); the first is well known, the second and third occur only in those rare cases where visitors to infected tropical regions have acquired the parasites and have brought them back to uninfected temperate regions. In the sputum one may find the eggs of the lung fluke, thus far known in this country only in a few Chinese, Japanese or Korean immigrants who have brought the infection with them. In the urine the Egyptian blood fluke is of equally rare occurrence in this country, although one unconfirmed record of its presence in a native of Illinois who had never been out of the state and its immediate vicinity points to an unfortunate error in determination or a serious condition heretofore unrecognized.

If I may depend on the opinions of physicians of wide acquaintance and good knowledge of conditions, it would be justifiable to say that fecal examinations are made in a few hospitals only and outside are rarely thought of. Taking into account the length and breadth of this state and of the great central west, I am inclined to regard this opinion as correct. Now it is unfortunate that fecal examinations are made so rarely since they furnish the most frequent evidence of parasitism. They are not difficult to make and can be carried through by the ordinary practitioner. Something regarding the technic of the process and the comparative value of different methods may be learned from a recent government publication.¹

In reaching a determination regarding the nature of the material which presents itself the physician has to deal with a purely microscopical problem. The essential data are obtainable only with the microscope and yet it should be remembered that they are easily obtained. Unlike the study of bacteria they do not demand any complicated technic, the use of high powers and difficult manipulations, or time-consuming cultures and involved treatment of the material. Determinations are most readily made from fresh material; they are rapidly made and require relatively low magnification. The repetition of the observation, even for several times, is naturally advisable if one is to avoid the evident dangers incident to errors of various sorts. Chance may make the first preparation very unusual or may present items in a peculiar light which further examination will enable the student to explain. But generally speaking the evidence is easily obtained and easily evaluated provided only the observer has a table of true values for comparison. A consideration of the items concerned will establish a table of true values and make my position clearer.

But before proceeding to consider that question a word of further explanation may be necessary. Because I have maintained that the determination of animal parasites is relatively easily made, it must not be inferred that the matter presents no difficulties. There are troubles here as well as elsewhere. But to be forewarned is to be forearmed, and some of the most serious difficulties prove trifling when proper precautions are taken in meeting them. It is hardly necessary to emphasize before such an audience as this the absolute necessity of determining beyond the shadow of a doubt the actual source of the material under consideration. Even a trained observer may be deceived and the ordinary man finds pitfalls everywhere. The cases of deceit are so frequent that every physician is on his guard to meet them, especially in patients of certain mental types. But the literature of science is full of instances in which highly trained specialists have been led astray and these few words of caution are not uncalled for even here. Extraneous material is introduced easily into containers or even forced into the body and evacuated at stool so that all statements regarding the source of the

1. Hall, M. C.: Bull. 135, Bureau of Animal Industry, 1911.

reputed parasites must always be scrutinized carefully. Granting, however, that the material in question came from the patient legitimately and had not been contaminated since it was evacuated, it is even yet not certain to be what it seems, and failure to proceed carefully at this point may involve the observer in serious trouble.

The varied contents of the human intestine, even in the individual who is mentally sound, are such as to provoke astonishment when examined carefully and listed accurately. A large per cent. of the supposed "finds" are in fact items of interest, but not of etiologic importance. For diagnostic purposes their accurate determination is fully as important as if they were really the cause of disease. I refer in the first instance to the class of objects ordinarily grouped together as pseudo-parasites although their varied nature entitles them to more accurate grouping under several headings. They are constant pitfalls even for the expert microscopist and their universal occurrence entitles everyone to examine any new material with the distinct subconscious feeling that things are not what they seem and even the careful student is sure to be trapped if only he continues long enough in the work of examining for parasites.

The first group of pseudo-parasites which demands attention consists of real animals, usually living and often even of the same general type as one finds parasitic, but in this instance only apparently of such habit. A fish nematode taken from a hollow tooth, was in reality no true parasite of man but a stray form, ingested with food and deposited by chance in this spot during the act of chewing. Other small nematodes, found in the vomit of a Russian, were in fact living in or on the onions he had eaten in too great abundance and were of no significance in connection with the troubles under which he labored. The well known round worm, popularly designated a hair snake, has been both vomited and passed *per anum* in many cases from both Europe and North America. It is actually a free-living animal in the adult form in which it has been found in these cases and its presence in the human alimentary canal is more unfortunate for the worm than for the host; it can neither continue to exist there nor do any harm while in that location. Yet it has been supposed to be the cause of most serious difficulties and in one case at least interpreted as the famous Guinea worm of the East. Earth-worms are among the common items reported from man, as positive and normal inhabitants of the human digestive system. Such material has frequently been sent me from various parts of the central west; and recently I received from a former student and friend, now a medical missionary on the Persian Gulf, specimens of a sea-worm much like our earth-worms which he thought was an actual parasite and the cause of serious trouble in a boy under his care. It is impossible that such a delicate skinned species, adapted to a free existence in such a multitude of ways, could be parasitic in man, and in fact could ordinarily resist digestion by human alimentary secretions. The well known experimental

habits of children will explain the presence in the stomach of such specimens;² while in other cases careless consumption of partly decayed food containing fly maggots, beetle larvæ, or even grubs of moths will suffice to show how such forms have gained access to the human system. Of course, the thick-skinned myriapods, or thousand-legged worms, will resist digestion long enough to be carried unharmed through the canal and appear in the feces; their presence, especially if the feces are somewhat fluid, will attract attention and the unusual character of the find will readily justify the conclusion that they are the cause of the trouble. Small leeches or even others of some size may be swallowed by accident in drinking and appear later in the false rôle of a human parasite. Cheese mites, found living in stomach contents and dead, but not disintegrated, in fecal material, are easily explained; but unfortunately they may be discovered by those who are not familiar with the appearance of such organisms and may lead the discoverer to radically false conclusions since such species cannot assume the rôle of human parasites even for a brief period. The occurrence of such forms in the urine is not so easily explained. And yet even if the source of the material is established beyond peradventure, one may doubt whether the condition is less exceptional than the discovery of a colony of detriticolous sarcoptid mites in a painless tumor of the testicle in a well known case in France. The species had reached an unusual location in some accidental manner and had found it possible to maintain its activities and even to multiply in this strange environment. They are no doubt one stage nearer true parasitism than the purely free-living species which were mentioned above, but are not to be counted among the true parasites of man.

The list of living animals to which has been ascribed a parasitic habit, but which are properly to be classed as pseudo-parasites, might be almost indefinitely extended. Among such one must list the book-scorpion (*Chelifer cancrivorus*), the common clothes moth (*Tineola biselliella*) and many fly larvæ or maggots, although the moth larvæ probably dropped accidentally from the lower side of a mattress into the vessel and were not voided with the urine as reported by the patient.

Such pseudo-parasites are by no means all higher forms such as those listed in the preceding paragraphs. Free-living species of protozoa have been reported as human parasites and their true nature discerned only after some study. Cobbold has discussed a case of this type in which the pseudo-parasites were psorosperm sacs, and Manson has recently described a case due to *Chilodon uncinatus*. The classic instance is undoubtedly that of Schaudinn, the discoverer of *Treponema pallidum*, who followed experimentally the life cycle of a delicate, typical pond-inhabiting rhizopod (*Chlamydomonas stercoraria*) when introduced into the human alimentary canal. This species is often abundant in feces, but the source is drinking water containing the encysted spore stages and the species never assumes parasitic habits, even temporarily.

2. I am informed by my colleague, Dr. J. W. Folsom, that he has seen certain of the bait-diggers on the South Boston tide flats eat such worms. It is not unlikely that poorly chewed pieces might pass through the canal only slightly changed, especially at times of digestive disturbances.

Not all pseudo-parasites are living animals, introduced by accident into the alimentary canal and thus coming into notice when its contents are subject to examination. Many pseudo-parasites are of plant origin. One of the most frequent of these is composed of partly digested banana fibers which simulate small tape-worms marvelously well. The first notice of these I have found was published in Boston in 1883, and they have been rediscovered periodically every few years in different sections of the country. *Lycopodium* spores in urine and feces have been reported often as eggs of parasites. Rust spores and pollen grains have achieved similar notoriety and the seed corn of *Morus nigra* has been duly baptized as a parasitic worm. Various plant fibers and partly digested masses of plant parenchyma or of other tissues such as the pulp vesicles of oranges or grape fruit have been diagnosed microscopically as tape-worms or flukes. Of similar source, i. e., from the food of the host, come the lingual ribbons of snails, reported as peculiar parasites in France several times within recent years. A friend brought me one day a small round worm from the fish he might have eaten, but did not. Undoubtedly it would have withstood digestion and under other circumstances have been the subject of a communication announcing the discovery of a new human parasite. There is no probability that it could have adapted itself to life in the human system, or have become a true parasite of man, even if swallowed uninjured.

Even parts of the body itself have been interpreted as parasites. Thus a vestigial remnant of the *Arteria hyaloidea* has been frequently mistaken for an eye-worm, and its movements in the posterior chamber of the eye as viewed through the ophthalmoscope are said to be a most realistic copy of the twisting and untwisting of a round worm. A fibrinous clot has been taken for a blood worm and only a year ago I had an undoubted clot sent me which had been passed with urine and from its striking form confidently interpreted as a kidney worm. Hydatid moles and pedunculated cysts have often been diagnosed as bladder worms.

It is important to have clearly in mind these non-pathologic elements frequently found in making fecal examinations in order to avoid confusing with them the objects of real pathologic significance which occur side by side with them in the material examined. Accordingly I may be pardoned for having dwelt so long on that phase of the subject and will now pass to consider what actual parasites one may find and how their true nature may be determined. The element of movement is a most important criterion in deciding what is a parasite and what an artefact of some sort. A determination of parasitic amebæ, which, by the way, requires a somewhat higher magnification and is moreover one of the most difficult problems that confront the clinical microscopist, must never be made unless the questionable bodies manifest motion. Epithelial cells make fine amebæ, and motionless bodies, however much like the real thing, must always be rejected as insufficient to prove the presence of amebæ in the intestine. The real amebæ will sooner or later be found moving and diagnosis on any other basis is absolutely unsafe. But the diagnosis of intestinal protozoa is a matter even yet little understood and difficult at

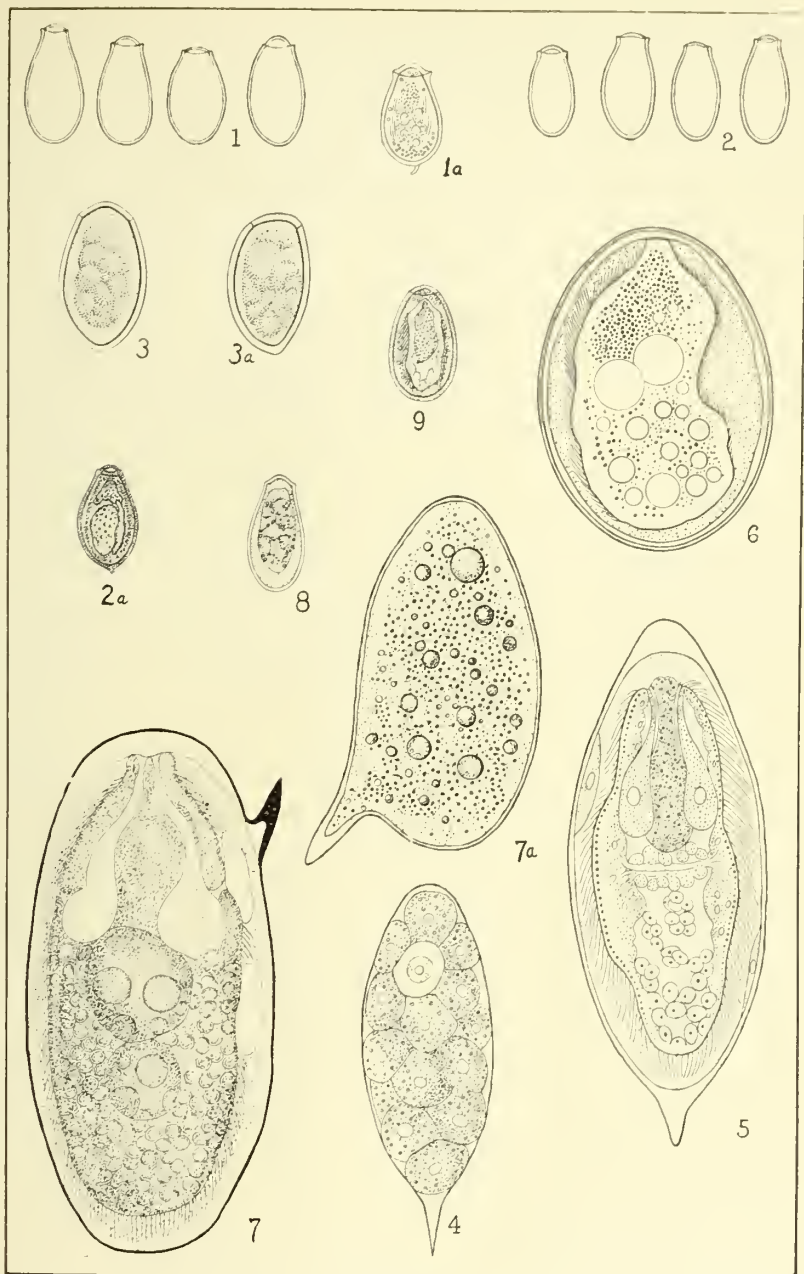


PLATE 1.

- Fig. 1.—*Clonorchis sinensis*. The chief forms presented by the eggs, each egg taken from a separate specimen of the worm. After Looss, 1907, Pl. IX, Fig. 7.
 Fig. 1a.—Egg of *Clonorchis sinensis*. After Ijima, 1887, Pl. VII, Fig. 3.
 Fig. 2.—*Clonorchis endemicus*. Eggs figured in the same manner and under exactly the same enlargement as in the preceding drawing so as to allow of comparison. After Looss, 1907, Pl. IX, Fig. 8.
 Fig. 2a.—Egg of *Clonorchis stuecis*. After Ijima, 1887, Pl. VII, Fig. 3.
 Fig. 3.—Egg of *Dicrocoelium lanceolatum* in surface view. After Braun, 1902, p. 168.
 Fig. 3a.—The same in lateral aspect.
 Fig. 4.—*Schistosoma hematobium*; egg from uterus of female worm, occasional only in feces and then generally calcified. After Looss, 1905, Pl. IX, Fig. 8.
 Fig. 5.—*Schistosoma hematobium*; normal egg from urine. After Looss, 1905, Pl. IX, Fig. 7.
 Fig. 6.—*Schistosoma japonicum*; egg from fresh feces. After Katsurada, 1904, Pl. VII, Fig. 1.
 Fig. 7.—*Schistosoma mansoni*, showing the lateral-spined egg with the miracidium. The different structures are shown diagrammatically. After Holcomb, 1907, p. 66, Fig. 3.
 Fig. 7a.—*Schistosoma hematobium*; abnormal (?) egg from feces. After Looss, 1905, Pl. IX, Fig. 9.
 Fig. 8.—Egg of *Opisthorchis felinus*. After Braun, 1902, p. 158.
 Fig. 9.—Egg of *Heterophyes heterophyes*. After Looss, 1896, Pl. V, Fig. 39.

best. We do not know even generally what forms occur in the human host, how they may be differentiated from each other or what rôle they play in the host organism. So I may be permitted to leave this entirely unsolved problem and turn to other groups concerning which some definite statements can be made. These are the long known and more carefully studied parasitic worms.

The larger types of parasitic worms have been known since the very beginning of medical history. Tape-worms and their pumpkin-seed shaped segments, as well as bladder-worms are recorded in the earliest medical writings, even though the relationship of these different structures was not suspected then or demonstrated finally until the nineteenth century. A. D. Round worms were also known in the ancient days and records of flukes are nearly as old. The modern student often repeats the common error of his predecessors when he identifies the separately discharged segments of tapeworms as flukes on account of their active and independent movements. Ordinarily, however, difficulties do not arise in dealing with these larger forms which are infrequent and also growing more so. The increase in knowledge regarding parasites has added to the list of human species many minuter forms, like the hookworm, or the rat tape-worm: these are found only on careful examination, and yet offer no especial difficulties in determination.

Embryos of parasites are rarely encountered in fecal examinations. They are minute and recognizable only on microscopical examination. When present one would also find in all probability the ruptured egg shells from which they had come, and also unbroken shells still containing embryos, so that these cases also reduce themselves to the problem of determining the eggs of parasites. This is the topic of the next section of this paper, but before passing to consider that I should call attention to the fact that one species, *Strongyloides stercoralis*, the reputed cause of chronic intestinal flux in the East where it occurs often in association with the hookworm, appears normally only in the embryonic form since the eggs hatch out before the feces which carry them reach the external world. This species has been reported a few times in the United States, first by Thayer of Johns Hopkins. The embryos have pointed tails, round heads and a double esophageal bulb in the posterior section of which are contained three teeth. The embryos measure 0.2 to 0.3 mm. in length by 0.013 mm. in width and swim about in the fluid feces with great activity. The eggs which occur usually in strings of three or four can be found in the feces only after the administration of a powerful cathartic. The embryos will probably be easily recognized as such. Other nematode embryos occur normally in the blood and rarely in glandular secretions. Such embryos are those of the various filariæ, known in the immature form as microfilariae. They are very rare in this part of the world, though common in the tropics and subtropics, and are difficult to distinguish because of great structural simplicity. The embryos of the trichina have been observed in this country several times in recent years in blood examination, and here also one finds no eggs: the species is viviparous and as the embryos are discharged into the lymph or blood-stream they

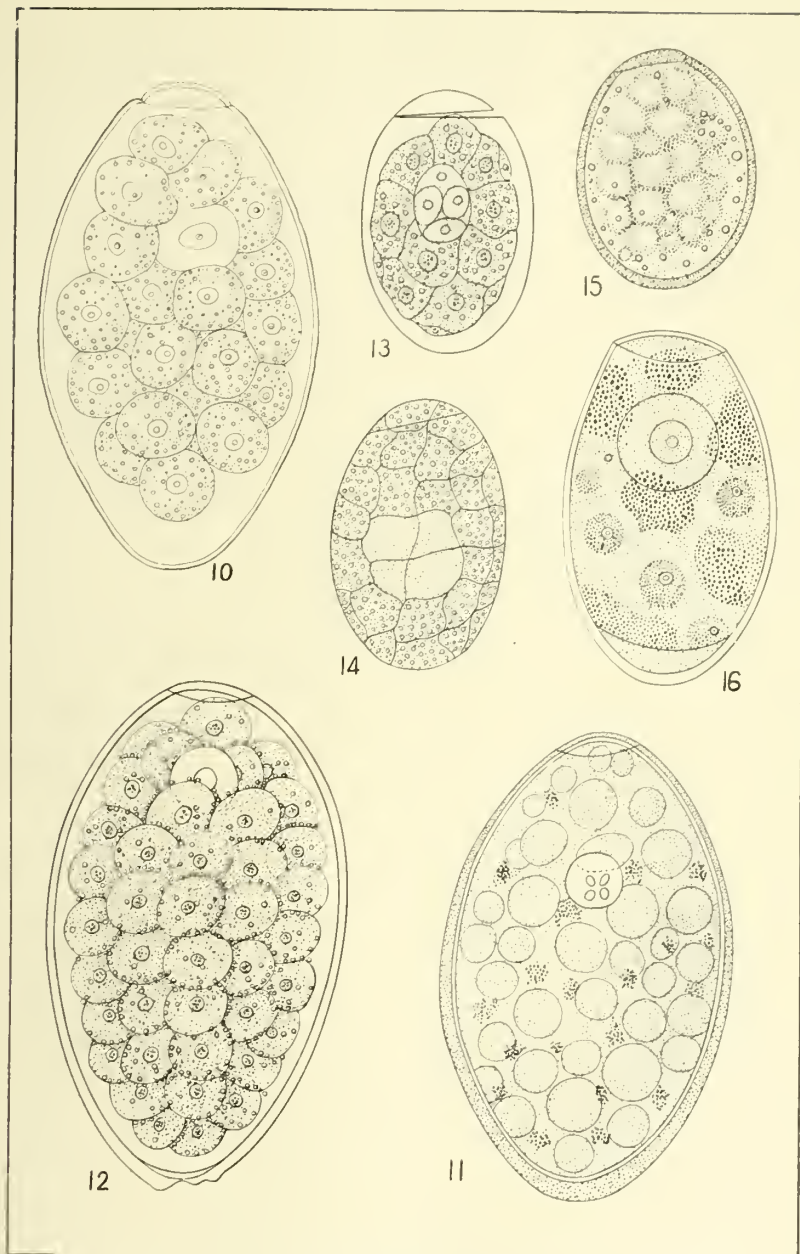


PLATE II.

Fig. 10.—*Fasciolopsis buskii*; egg from uterus of full-grown worm. After Loess, 1905, Pl. IX, Fig. 4.

Fig. 11.—Egg of *Fasciola magna*. After Stiles, 1894, p. 227, Fig. 4. This figure is drawn to the minimum, not to the average size of ova, in this species.

Fig. 12.—Egg of *Fasciola hepatica*. After Sommer, 1880, Pl. VI, Fig. 1c.

Fig. 13.—Egg of *Dibothrioccephalus latus* with operculum opening. After Schauinsland, 1886, Pl. VII, Fig. 31.

Fig. 14.—The same, earlier stage. After Schauinsland, 1886, Pl. VII, Fig. 29.

Fig. 15.—Egg of *Diplogonoporus grandis* taken from the uterus. After Ijima and Kurimoto, 1894, Pl. XVIII, Fig. 9.

Fig. 16.—Egg of *Paragonimus ringeri* from sputum of man. After Katsurada, 1900, p. 507.

cannot be found in fecal examinations. At most and indeed very rarely one may find adults of this species in feces.

The most frequent evidence of parasitism secured by fecal examination is the presence of eggs which are not difficult to recognize as such. The further diagnosis of the material depends on careful observation of peculiarities of individual species. At first glance all of a group look much alike and a short experience will enable the observer readily to classify the egg under observation as that of a trematode or fluke, a cestode or tape-worm, or a nematode or round worm. Further examination will serve to determine average size and form, peculiar texture and other individual features that will enable the investigator ultimately to make a differential diagnosis. It is important first of all to measure ten or twenty eggs in order to arrive at the average size and range. In doing this I hardly need caution the microscopist against selecting such as have evidently experienced injury and are broken or distorted. Like all such structures these eggs display some normal variation, but any discrepancy in size of considerable amount when reckoned on a comparative or percentage basis is likely to indicate actual specific differences and not individual variations. Failure to comprehend and to apply this principle has resulted in much confusion in the past.

The surface of the shell should be examined carefully to determine the presence of markings or pittings over some part of its area, or of spines or knobs at one point or another. All such features if generally found on the eggs under consideration, and not as exceptional or abnormal features of one or a few specimens, will serve as factors in reaching a decision as to the species present.

There are some eggs that by virtue of a richly sculptured surface are sometimes not recognized as such, and there are other bodies of oval form which appear like eggs. Thus coccidia have been diagnosed as distome eggs and *vice versa* fluke eggs were once duly baptized as a new genus and species of coccidia. Such errors can only be avoided by careful study of the material and yet the danger at this point is small. There are very few items in fecal examination which with reasonable care will be confused with the eggs of parasites that occur in the feces. However, in order to make the description even more unmistakable I have prepared drawing of the eggs of various parasites which accompany this text and illustrate the size, form and individual peculiarities of the egg in each species. Nearly all species are represented which infest man, even rarely, and the types omitted are such as the student in this region would be unlikely to encounter; they occur so rarely and in such distant and limited regions as to render their omission of little practical importance. The series of descriptions and figures will also serve to aid the physician in determining if there be in this region other forms of internal parasites as yet unrecognized. These eggs are grouped according to the various types of parasite. As each type has its characteristic type of egg a preliminary examination will suffice to determine the group to which the egg belongs and further comparison need be made only within the limits of this group.

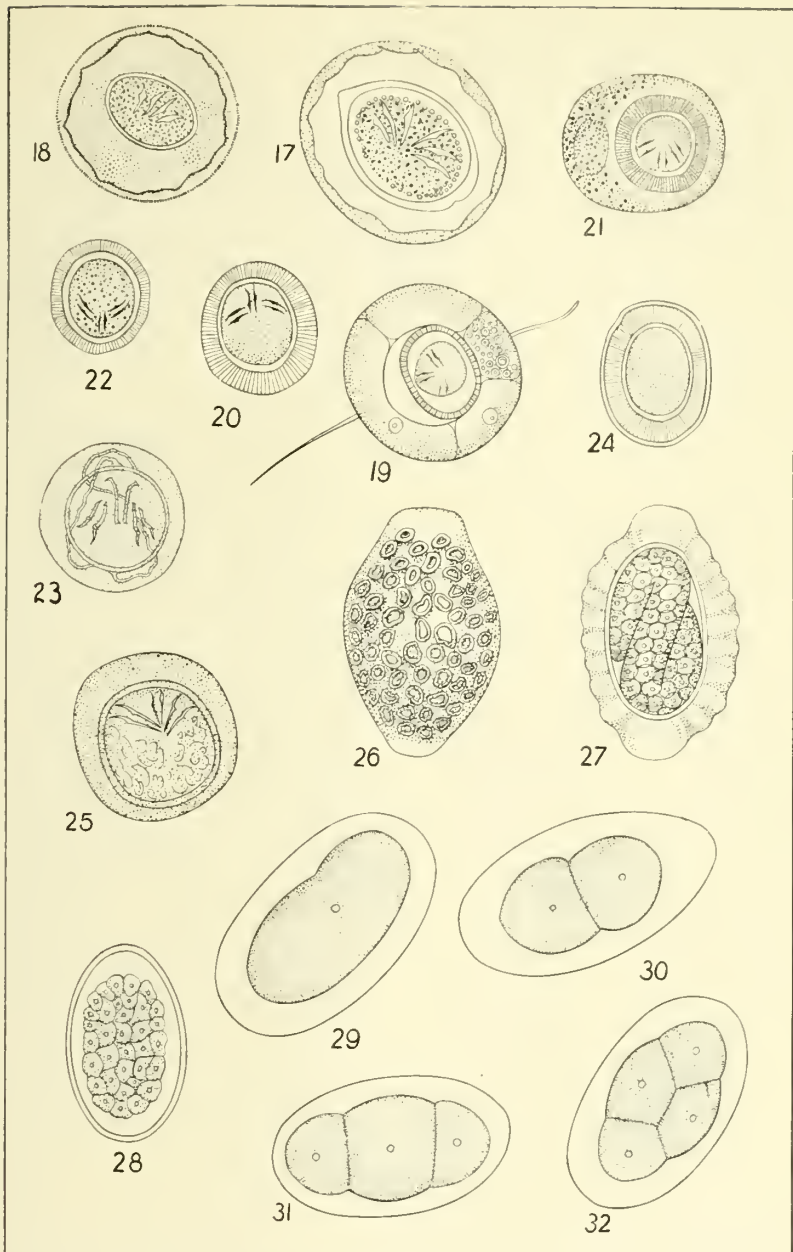


PLATE III.

- Fig. 17.—Egg of *Hymenolepis diminuta*, elongated form.
 Fig. 18.—The same, spherical form. After Blanchard, 1891, p. 45.
 Fig. 19.—Mature egg of *Taninia saginata*. After Leuckart, 1886, p. 568.
 Fig. 20.—The same without external membrane. From human feces. After Leuckart, 1886, p. 186.
 Fig. 21.—Egg of *Taninia solium*. After Leuckart, 1886, p. 667.
 Fig. 22.—The same without external membrane. From human feces. After Leuckart, 1886, p. 186.
 Fig. 23.—Egg of *Hymenolepis nana*. After von Linstow, 1896, p. 580, Fig. 4.
 Fig. 24.—Egg of *Taninia confusa*. After Guyer, 1898, Pl. XXVIII, Fig. 11.
 Fig. 25.—Egg of *Dipylidium caninum*. After Diamare, 1893, Pl. I, Fig. 18.
 Fig. 26.—Egg of *Dioctophyme renale* in surface view. After Balbiani from Railliet, 1893, p. 421.
 Fig. 27.—The same in optical section.
 Fig. 28.—Egg of *Ankylostoma duodenale*. After Patona and Grassi, 1878, Pl. II, Fig. 6.
 Fig. 29.—Egg of *Nccator americanus* from human feces. After Stiles, 1902, p. 193.
 Figs. 30-32.—Same with cleavage begun.

The trematode, or fluke, produces an oval or ellipsoidal egg, usually dull yellow, yellowish brown, or dark brown in color, and semi-opaque or even more difficult to see through. In form it is usually symmetrical though one or two species have one side slightly flattened. One end is usually a little blunter, and often the other end bears a small knob, or even a tail-like spine. In the place of this knob or filament some eggs merely show a roughened area. Many fluke eggs have a cap or lid which springs open when the embryo is ready to emerge. In other cases this structure does not exist, but even where it does, the observer may have much difficulty in demonstrating its presence. The thickness of the shell varies, but on the average is rather great except in the blood flukes, where also there is a well developed spine in one species, but no cap. The number of eggs produced is large and the production constant so that the observer can repeat his findings from day to day over long periods of time. Data regarding the majority of species may be found under the individual headings.

The sheep liver fluke, *Fasciola hepatica*, is a cosmopolitan parasite of that common domestic animal. It occurs in great numbers in all moist regions and yet its rarity in the human host is such that only a score or more of cases are on record. The egg (Fig. 12) measures 0.13 to 0.140 mm. in length by 0.075 to 0.09 mm. in breadth, being among the largest of fluke eggs in man. Rosenberger has recently published³ a record of its presence in a hospital patient which no doubt rests on an error; the species present was probably *Fasciolopsis buskii*. These two eggs are easily confused on account of their great similarity in size and form. On the whole the egg of *F. hepatica* is rounder or fuller, the shell is a trifle heavier and the cap perhaps not quite so distinct. The egg of *F. hepatica* has also a few irregularities at the pointed pole.

The large American fluke, *Fasciola magna*, occurs over a large area of our country, in wild ruminants or in cattle. It has never been reported from man; the eggs (Fig. 11) are so much like those of *F. hepatica* that Stiles says they can hardly be distinguished, even though in general he finds them slightly larger.

Busk's fluke, *Fasciolopsis buskii*, is common in the East and has been recorded as introduced into this country at several places. The ova (Fig. 10) measure from 0.12 to 0.13 mm. in length and from 0.07 to 0.08 mm. in breadth. The shell is thinner and tapers more towards both poles than in *F. hepatica*. The cap is smaller.

Much confusion was introduced into scientific literature by grouping together as one species the different forms of lung fluke. In recent publications I have shown that there are at least three distinct, though closely related species. The American lung fluke, *Paragonimus kellicotti*, thus far found only in dog, cat and hog, and not in man, has eggs which measure 0.096 to 0.0118 mm. long by 0.048 to 0.055 mm. broad. The original form, *Paragonimus westermanii*, found in the tiger in India, has eggs which are only 0.077 to 0.081 mm. long and 0.043 to 0.050 mm. broad. The Asiatic lung fluke, *Paragonimus ringeri* (Fig. 16) found very

3. Proc. Phila. Natl. Soc., xiv, 112.

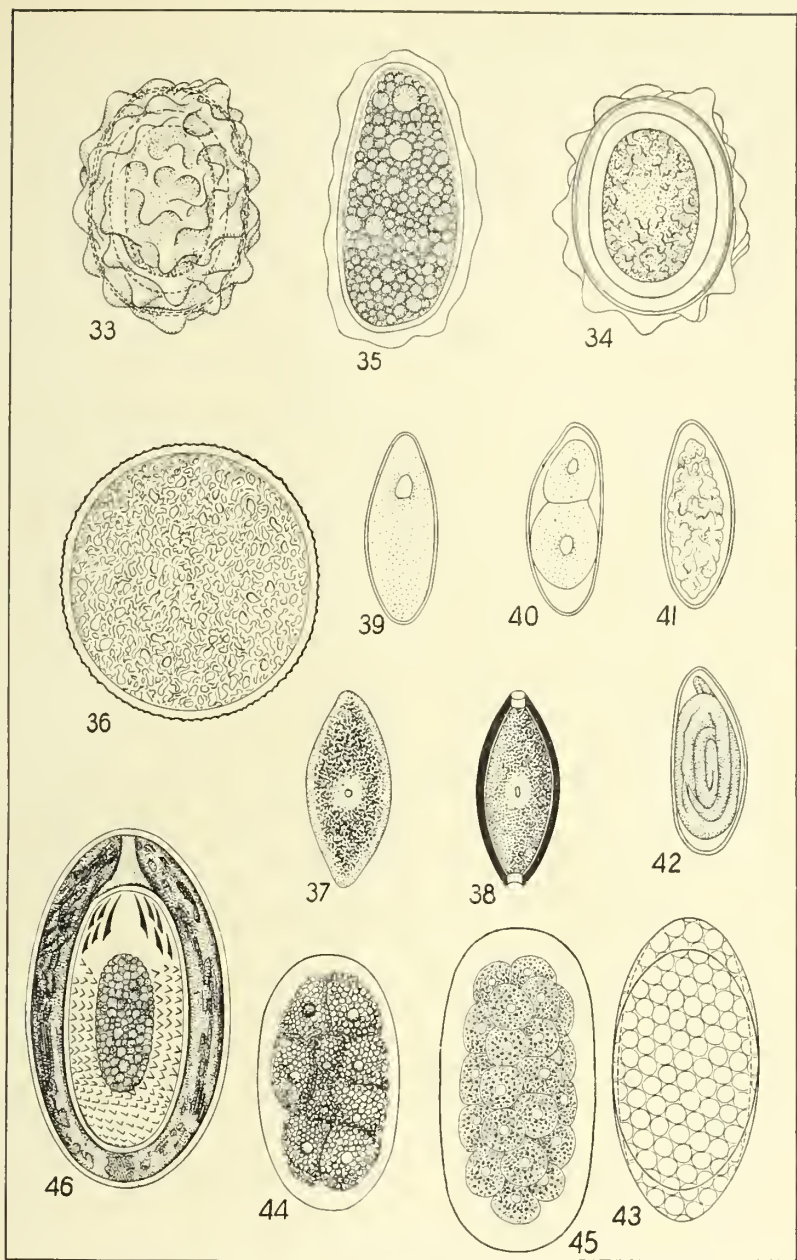


PLATE IV.

Fig. 33.—Egg of *Ascaris lumbricoides* from human feces. Seen in surface aspect. After Stiles, 1902, p. 202.

Fig. 34.—Same in optical section.

Fig. 35.—Unfertilized egg of *Ascaris lumbricoides* from human feces. After Minra and Nishiuchi, 1902, p. 638.

Fig. 36.—Egg of *Ascaris canis*. After Brahm, 1902, p. 303.

Fig. 37.—Egg of *Trichouris trichura* from uterus of female worm. After Leuckart from Stiles, 1902, p. 202.

Fig. 38.—Same in stage from human feces.

Figs. 39-41.—Eggs of *Oxyuris vermicularis* taken from uterus of female worm. After Leuckart from Stiles, 1902, p. 202.

Fig. 42.—Same in stage found in human feces.

Fig. 43.—Outline of egg of *Strongylus subtilis*. The larger oval and the cleavage cells from eggs free in stomach contents, after Iijima, 1896, p. 169; the smaller oval from eggs before deposition, after Looss, 1895, p. 169.

Fig. 44.—Egg of *Strongyloides stercoralis* from human feces. After Thayer, 1901, Pl. IX, Fig. A.

Fig. 45.—*Trichostrongylus instabilis*; egg from feces. After Looss, 1905, Pl. IX, Fig. 21.

Fig. 46.—Egg of *Gigantstrongylus gigas*. After Leuckart from Brahm, 1902, p. 309.

abundantly in man in Japan, China and Formosa and introduced by laborers into the United States, has ova that measure 0.087 to 0.1 mm. by 0.052 by 0.066 mm. It is not difficult to distinguish the adult worms by microscopic data, but as the ova are so much alike care is needed to avoid errors in diagnosis when the eggs only are available. It should be remembered that either species not yet recorded from man may occur in that host and it is very important to determine accurately the species present in new cases as that will help indicate the source of the infection. So far as known all American cases are imported and none represent infection acquired on this continent.

There are really two types of the form formerly called *Opisthorchis sinensis*. These have been designated by Looss as the Chinese fluke, *Clonorchis sinensis*, and the Japanese fluke, *Clonorchis endemicus*. The former has been seen at autopsy of Chinese in this country. The eggs of the two species are very similar measuring from 0.025 to 0.03 mm. in length. In *C. sinensis* (Fig. 1) the width is from 0.015 to 0.017 mm. while in *C. endemicus* (Fig. 2) the egg is distinctly more slender, measuring only 0.013 to 0.016 mm. in width.

The Egyptian fluke, *Heterophyes heterophyes* has never been reported in North America. The egg (Fig. 9) measures 0.03 by 0.017 mm.

The lancet fluke, *Dicrocoelium lanceatum* (Fig. 3, 3a) common in sheep has been found only very rarely in man in Europe and never in this country. Its eggs measure 0.038 to 0.045 mm. by 0.022 to 0.030 mm.

A few other flukes are reported from the human intestine, but so rarely, only a single case of infection from each species, that they may be passed over here with the bare mention. But I cannot leave the subject of flukes without some reference to the species that inhabit the blood system, especially the portal vein and its branches, together with the veins of the pelvis, bladder and rectum. The ova escape into the bladder and rectum and so may be seen either in urine or feces.

The oldest and best known species is the Egyptian blood-fluke, *Schistosoma hamatobium*, the eggs of which are always voided with the urine. They are very large (Figs. 4-5), being usually about 0.12, but even up to 0.19 mm. long by 0.05 to 0.013 mm. broad. One end tapers to a spine of variable length. The shell is very thin; there is no cap present. Within one can see the fully grown embryo moving about, ready to hatch. When brought into fresh water the egg splits open and the embryo swims out.

The Asiatic blood-fluke, *Schistosoma japonicum*, discovered by Katsurada in 1904, and now known to be abundant in Eastern Asia, deposits its eggs where they escape into the rectum and are voided with feces. The eggs (Fig. 6) are much smaller, averaging only 0.083 by 0.063 mm. They also contain a well developed embryo. The eggs of this species, studied in the Philippines by Wolley, were somewhat smaller still, being on the average only 0.062 to 0.044 mm. The eggs of this species are rounder than those of *S. hamatobium*, blunt ended and without spines, though a minute knob or thickening may be detected in some cases by high power.

A third species, characterized by lateral spined eggs, has been said to occur in the West Indies and the Canal Zone. These eggs (Fig. 7) measure 0.012 to 0.162 mm. by 0.06 to 0.07 mm. To this species the name *Schistosoma mansoni* has been given. Some eminent authorities deny that these are more than abnormal ova (Fig. 7a). The possibility of finding cases in Illinois introduced from the Canal Zone must not be lost sight of.

Tapeworm eggs are distinctly variable in form. Ordinarily one finds them spherical, oval or elliptical, but some are polyhedral or more or less irregular. The fish tape-worms have eggs much like those of the flukes already described; the shell is yellow, or yellowish brown, with a cap; and a ciliated embryo develops within the shell. Other tape-worm eggs have no lid and the shell is often very thin. There are two or three other membranes, sometimes with long filaments at the poles; and these membranes may shrink or be torn away, so the appearance of the egg is changed radically. Furthermore, the embryo has no cilia, but is a minute six-hooked sphere, the so-called onchosphere, often conspicuous and easily recognized. The membrane next to the onchosphere is thick and usually of peculiar structure. It is of all the most constant in appearance and in size, and is used as a diagnostic feature. It is known as the embryophore.

The fish tape-worm of man, *Dibothriocephalus latus*, possesses eggs (Figs. 13, 14) with a thick brown shell, provided with a small cap which is usually easy to see. They measure 0.068 to 0.071 mm. in length by 0.045 mm. in breadth. This species is common in Scandinavian territory and has been introduced into this country by immigrants. It has succeeded in gaining a permanent foothold at least in one lake region in Minnesota.

The large Japanese tape-worm, *Diplogonoporus grandis*, has not yet been recorded in the United States. Stiles has called attention to the importance of watching for its evident possible introduction by immigrants or troops returning from the East. The egg (Fig. 15) has a deep brown shell, which is thick, oval, and measures 0.063 mm. long by 0.048 to 0.050 mm. broad.

The rat tape-worm, *Hymenolepis diminuta*, was first reported from man in this country and since then has been shown to occur in Europe and South America also. The eggs are round (Fig. 18) or oval (Fig. 17), and measure 0.060 to 0.070, rarely up to 0.086 mm., in diameter. The external membrane is indistinctly striated, and delicate, the middle membrane is double, the embryophore has two points or knobs at the poles. The onchosphere measured 0.036 by 0.028 mm. and its hooks are 0.011 mm. long.

The dwarf tape-worm, *Hymenolepis nana*, which recent work has shown to be the most common human cestode in the United States at present, has spherical eggs; the inner membrane has at two poles indistinct filiform processes (Fig. 23) three or four times as large as the egg. These threads lie coiled between the two membranes in such a way as to simulate a third intermediate membrane. The external diameter of the egg is 0.039 mm., the inner membrane measures 0.028 mm. and the onchosphere 0.016 to 0.019 mm. in diameter. The hooks are 0.0092 mm. long.

The beef tape-worm, *Tania saginata*, produces eggs (Fig. 19) with a delicate external membrane often drawn out into delicate processes at the poles. This membrane measures 0.07 mm. in diameter and is often wanting (Fig. 20). The embryophore is heavy, cross-striated and oval in form, measuring 0.03 mm. in length. The embryo itself measures only 0.02 mm. in diameter.

The pork tape-worm, *Tania solium*, has eggs (Figs. 21, 22) not readily distinguished from those of the beef tape-worm as they are practically identical in size. The embryophore is more nearly spherical, the onchosphere a trifle smaller, and possibly thicker walled. But these two eggs can hardly be differentiated microscopically with certainty.

A new American species, *Tania confusa*, which has been seen only rarely, has eggs (Fig. 24) that are white, or only slightly yellowish. They measure 0.039 mm. long by 0.03 mm. broad.

The dog tape-worm, *Dipylidium caninum*, is a rare parasite of man. Its eggs (Fig. 25) are spherical and measure 0.043 to 0.05 mm. in diameter. The embryophore is thin; the six-hooked embryo measures 0.032 to 0.036 mm. in diameter.

A few other species of cestodes have been recorded in rare instances from the human host. They are not sufficiently well known or frequent to call for further mention here.

Among the round worms, or nematodes, the ova are variable in type and are rather definitely related to the life history of the individual species. All of the filariæ are viviparous and the eggs develop to young worms in the uterus of the parent. They are extruded as active embryos into the blood or lymph in which they are often found in infected regions. Other forms produce eggs which are retained so long in the body of the female that when deposited they contain a fully developed young embryo just ready to hatch out. In such cases the egg shell is delicate, easily broken and usually transparent. At the other extreme one finds eggs with enormously thickened shells, to which in some cases is added an extra outer layer of other material. In the thick-shelled egg the development of the germ cell has often hardly begun and the embryo requires weeks or even months for its development. Such eggs have also extraordinary powers of resistance and retain vitality and ability to yield a living embryo after having been kept in dust in a laboratory jar for several years. Between the two extremes noted one may find every gradation represented by some particular species, and *vice versa* may justly infer the general course of the embryonic history from the character of the particular egg. Nematode eggs are round or oval without a cap, and, if irregular in surface aspect, are so by virtue of the outer layer already noted. The character of the embryonic mass within the shell is important in reaching a determination of the species.

The egg (Fig. 44) of *Strongyloides stercoralis*, already referred to, has been described by Thayer; this egg does not usually reach the exterior as the embryo develops rapidly and ordinarily hatches out in the intestine. The egg measures 0.0675 by 0.0375 mm., is elliptical with a

clear yellowish shell or granular contents. Foreign investigators give the measurements somewhat differently. Thus Braun states them as 0.050 to 0.058 by 0.030 to 0.034 mm.

The whip-worm, *Trichuris trichiura*, has elliptical eggs (Figs. 37, 38) very easily recognized by the thick shell, which is apparently perforated at both poles and has the pores closed by transparent plugs. These eggs taken from fresh feces show contents which have not begun to divide. They measure 0.050 to 0.054 mm. long by 0.023 mm. broad.

The very rare kidney-worm, *Diectophyme renale*, which occurs as a parasite of the dog in this state, but fortunately has not yet been found in man, has eggs of a peculiar corrugated exterior readily recognizable in the illustration (Figs. 26, 27). They are 0.064 mm. long and 0.04 mm. broad.

Trichostrongylus subtilis, which is common in man in Egypt and is also reported from Japan, has thin-shelled colorless ova (Fig. 43), much like those of the Old World hookworm in form and appearance and likely to be confused with them in fecal examination. The egg shell measures 0.073 to 0.076 mm. in length by 0.040 to 0.043 mm. in breadth. It is thus much larger than that of the Old World hookworm and somewhat larger than that of the American hookworm.

The Old World hookworm, *Ankylostoma duodenale*, produces a thin-shelled egg (Fig. 28) which contains a mass of large cleavage cells. The egg measures 0.056 to 0.061 mm. long by 0.034 to 0.038 mm. broad.

The egg (Fig. 29) of the American hookworm, *Necator americanus*, is especially characterized, according to Looss, by a marked tapering toward one pole, a feature not seen in the eggs of *Trichostrongylus subtilis* or of *Ankylostoma duodenale* with which it may be most easily confused. The eggs of the American hookworm (Figs. 29 to 32) are intermediate in size between those of the other two species, measuring 0.064 to 0.072 mm. long by 0.036 mm. thick. Some contain a mass of large cells, others have already a fully developed embryo when voided.

The most easily recognized of all eggs is that of the common stomach worm, *Ascaris lumbricoides* (Figs. 33, 34). It has a roughly mammillated surface and a heavy shell wall. In form it is elliptical to rounding; the shell is three layered and the external albumin coat has a yellowish tone. The contents are granular and a clear space, crescentic in form, intervenes at each pole between the contents and the shell. These eggs measure 0.065 by 0.049 mm. Occasionally one finds in fecal examination a number of peculiar eggs (Fig. 35) which suggest those of this species, but are distinct in form and proportions, and especially so in thickness of the outer shell layer. They are nearly smooth in surface aspect and the contents appear different, particularly since the clear areas noted above are entirely lacking. In fact these peculiar eggs are unfertilized eggs of this species.

The dog stomach-worm, *Ascaris canis*, is very rarely found as a human parasite. Its ova (Fig. 36) are readily recognizable by their spherical form. The shell is thin and the albumin layer regular and not conspicuous. The egg measures 0.068 to 0.072 mm. in diameter.

The seat-worm, *Oxyuris vermicularis*, does not ordinarily deposit its eggs in the feces, so they are rarely found in fecal examinations. The eggs (Figs. 39 to 42) are oval, possess a very thick shell and contain, when deposited, an already well developed embryo. They measure 0.05 by 0.016 to 0.02 mm.

A single record of a human nematode parasite, *Ascaris texana*, would hardly call for notice were it not that this form may occur in our own state. According to Smith, the ova were numerous, with thick shell, which has neither special markings nor external albumin layer. These eggs measured 0.060 by 0.040 mm. The data regarding this form are unfortunately incomplete.

The acanthocephala are rare as human parasites though one species is the most abundant parasite of the domestic hog. The eggs are very characteristic, having three membranes and containing an embryo already well developed before they leave the parent worm. The egg (Fig. 46) of *Gigantorhynchus gigas*, the pig-worm, measures from 0.08 to 0.1 mm. in length. The embryo shows at the one pole a group of hooks.

Data are not given for a few species of round worms which are so rare as human parasites, or so isolated and distant in occurrence, that they are not likely to be found in fecal examinations in this part of the world.

EXPLANATION OF PLATES

All of the figures have been brought to the same scale in copying and the reproduction has made them of the uniform magnification of 500 diameters. Unless otherwise stated they represent normal and average ova for the species indicated.

SOME MODERN MEDICO-SOCIOLOGIC CONCEPTIONS OF THE ALCOHOL, VENEREAL DISEASES, AND TUBERCULOSIS PROBLEMS *

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NEW YORK

Mr. President, Members of the Illinois State Medical Society, and Invited Guests: My first duty, and I assure you it is a pleasant one, is to thank you with all my heart for the honor you have conferred on me by the call to deliver the oration on medicine before this illustrious medical body composed of the physicians and surgeons of the great state of Illinois. I rejoice in being with you and I know that I am and shall be benefited by my association with so eminent a body of men.

* Oration on Medicine delivered before the Annual Meeting of the Illinois State Medical Society, at Springfield, Ill., on May 23, 1912.

I trust that I shall retain much of the instructive papers and discussions I have listened to, but aside of that I am sure that I shall take away with me some of that progressive spirit so characteristic of the West. It was my rare privilege to have commenced my medical career in the most western state of all, in the glorious climate of southern California; and it has been my equally great privilege in late years to have been called to address various medical societies in the western states and meet men from these states in consultation. So I may say I feel really at home among you and feel that you will understand me if in what is to follow I bring forth some modern, some western ideas which, in the more conservative environments of the East might perhaps find less willing ears. Thus, with a feeling of confidence that, even if you do not entirely agree with me, I shall have your sympathetic interest, I will at once proceed to give you what I consider a modern medicosociologic conception of the alcoholic problem.

The Conservation Commission has reported that 3,000,000 people of this country may be considered on the sick list and that their annual loss in wages is \$700,000,000. What portion of these 3,000,000 suffer from either one, the two or all the three medicosocial diseases or their sequelæ, I leave to your imagination to determine.

ALCOHOLISM

I will try to burden this paper as little as possible with statistics, for I do not believe that any of the published statistics, either on the production of alcohol, the amount of its consumption, or the amount of evils alcoholism is responsible for, are accurate. Besides the legitimate production controlled by the government, there is the illicit still; besides the consummation of alcohol in wine, beer, and whisky, drunk at home or passed over the bar in the saloon, there is the large amount of alcohol taken in the form of patent medicines, of which it is said that the American people consume annually \$2,000,000 worth. While we know that any number of diseases can be traced to the excessive and injudicious use of alcohol, when this is the primary cause of death it is rarely found in our statistical tables.

The claims that 25 per cent. of all insanity is due to alcoholism and that a larger percentage of crime can likewise be traced to excess in alcohol, may be approximately correct, but here we have only official data from institutions and the number of epileptics, feeble-minded, or those on the border line of insanity who are at liberty have never been counted. Neither do we know half of the crimes committed under the influence of alcohol, for unless the victim has been seriously injured physically and the matter becomes known to the police, nothing is heard of the incident.

Of the moral injury, the mental suffering, the agony of soul, which an alcoholic may produce we hear nothing. Think of the inebriate husband returning home, abusing his wife and children, quarreling without cause, depriving them of comforts and often of the necessities of life because he spends most of his earnings to satisfy his cravings for liquor! Think of the father or mother who see their offspring, perhaps a promis-

ing, bright, unusually talented young man, fallen victim to the drink habit and disgracing himself and all those who should by bonds of blood be near and dear to him! Lastly, can you conceive of a more agonizing spectacle than a drunken woman? That such cases are not by any means infrequent and are not confined to the so-called lower strata of society many a family practitioner or nerve specialist can testify.

Some call alcoholism a curse, a bane, an evil; I prefer to call it a disease, preventable and curable. It would seem to me that for our purpose to-day there is no need to make any distinction between acute and chronic alcoholism. In an acute alcoholic attack a man may be as dangerous as the chronic alcoholic is occasionally, and vice versa. Both states are pathologic and while there may be no visible pathologic changes, the finer brain and nerve cells become surely affected. Repeated acute attacks of alcoholism or a chronic inebriation by wine, beer, or whisky are due to an alcoholomania. Whenever alcohol is taken in poisonous amounts we have mental disturbance, muscular incoordination, gastroenteritis, etc.

The symptomatology as well as the pathology are known only too well, but concerning the etiology and treatment from a medicosociologic point of view we need to know a good deal more. Is this disease hereditary or not? I am convinced that the tendency to alcoholism is not infrequently transmitted. The cases on record are quite frequent. Dr. Norman Kerr,¹ the president of the British Society for the Study of Inebriety, states that among 1,500 inebriates under his care, 755 had a distinct parental inebriety. Crothers in this country collected 500 alcoholic cases with 225 of parental inebriety. In a recent discussion on "The Influence of Alcohol on the Germ Cells and on the Offspring," before the New York Academy of Medicine, Prof. Charles R. Stockard of Cornell University quoted the observation of Sullivan which, I believe, gives the best clinical evidence to justify classing alcoholism as a disease directly transmissible through the germ cells by its influence on the ovum. The following is a case from my own observations: A sober and industrious woman married a sober and industrious husband and had three normal children. The husband died, and she married a drunkard; the result of this union was again three children; one became a drunkard, one an epileptic, and one a degenerate. This second husband died; the woman entered the matrimonial state a third time, but having profited by her experience with the second husband, chose once more a sober and industrious man. The issue of this union were two children sound in body and mind.

The observations in the Edinburgh prison for inebriates showed that when the mother was the alcoholic parent, the results were even more disastrous, for abortions, degenerates, children addicted to drink, or afflicted with epilepsy and insanity were numerous and the number was still greater when both parents were drunkards.

Aside of the mental and nervous diseases which afflict those born of alcoholic parentage we can surely consider gout and, in not a few instances, a tuberculous predisposition to be the result of the alcoholic

1. Twentieth Century Practice of Medicine, vol. iii.

inheritance. Marcomaniac impulses have been manifested at the age of 5 and 6, and the morbid impulse, unless resisted, tends to grow stronger. In some instances the individual seems to be fully aware of this inherited tendency and the danger to which he is exposed. I recall the case of a gentleman of my acquaintance and a coworker in social work, one of the highest type of men I have ever met. He confessed to me that he was certain that his gouty affliction was transmitted to him from his parents, that he had restrained the impulse to indulge in alcohol from the time he could think and reason, and that he was certain that if he were to yield even then to the desire to partake of alcoholic beverages, he would end in the gutter. Such cases of self-restraint are, however, rather the exception than the rule. A vast number of the progeny of the alcoholic, as has just been stated, become also addicted to alcoholism, develop into epileptics, become insane, or are degenerates.

We possess, however, not only clinical but also absolute and irrefutable laboratory evidence which shows the great affinity of alcohol not only for the brain and nervous system but also for all the reproductive glands.

Dr. Stockard, in his communication already referred to, spoke of experiments which showed that by exposing fish embryo to the fumes of alcohol, veritable monsters can be produced; and his experiments with hen's eggs, mice, and guinea-pigs all show that when the embryo is exposed to alcoholic influence in the early stages the result is always detrimental, although in the later stages the influence on the reflex system is greatly lessened.

After thus defining alcoholism as a hereditary affliction or an acquired illness, let us try to look a little deeper into the etiology of acquired conditions in the hope of finding a guide to prophylactic and curative measures. Among the diseases which predispose to alcoholism are rheumatism, gout, syphilis, epilepsy, anemia, uterine troubles, and digestive disturbances due to unwholesome and injudicious diet. Thus we must first cure all these afflictions if we would wish to do away with them as predisposing factors. In women, it is said that menstruation, parturition, lactation, and menopause are not infrequently potent influences in acquiring the alcohol habit; and in boys arriving at the age of manhood the desire to partake of alcoholic drinks often arises not merely because of their entering manhood, physiologically speaking, but also from a sociologic cause — a desire to do as men do.

When the tendency to alcoholism is not inherited, it would seem that the chances for acquiring the alcohol habit are greater after the age of 25, but if we would wish to institute an intelligent prophylaxis it might be well to bear in mind the fact that in young men and, alas, also in young women, the gradual liking for alcohol is developed at a time when they begin to associate with each other in social functions or enter into business life in a more or less independent position.

Idleness as well as monotony in daily physical labor and sedentary occupations are important sociologic factors predisposing to alcoholism. I do not know what remedy to suggest for this except that the employers of large or small bodies of men or women should bear in mind that the

efficiency of the worker is increased by rendering him mentally happy and physically well.

That higher culture or a liberal education is not always a restraining influence from alcoholism has already been pointed out; but among the higher as well as among the lower classes of men and women there are other causes underlying alcoholism which are well indicated in the definition by Dr. Smith Ely Jelliffe of New York City. He considers alcoholism a purely mental problem. That I do not entirely agree with him you must have already noticed, but his definition that alcoholism is a characteral reaction, the result of fundamental needs, is certainly applicable to a large number of cases. To the depressed, to the discouraged, to the disappointed men and women, to the overworked, to the individual who because of age or infirmity has lost the control of affairs or the prestige in the social or business world he formerly enjoyed, the indulgence in alcoholic drink brings a dissociation of function and an imaginary return to former happier, more contented states, or forgetfulness. When this resort to alcohol becomes chronic, I think Dr. Jelliffe's statement that man then reverts from the highest type of his development to the lower degrees which he had passed through in his evolution is most applicable. It would thus seem futile to treat alcoholism in an individual without having studied his character reaction and found the underlying cause of the desire for alcoholic stimulants — in other words, we must study the true etiologic factor in the individual if we wish to cure him of his disease. It is then that the psychologist, the physician of the mind and soul, can display his power and bring into play his ability to reason with the patient and help him again to a normal state of mind. That in some instances suggestion-therapy, autosuggestion, and even hypnotism, must be resorted to, I am absolutely convinced.

We come now to the last and to my mind most important sociologic factor predisposing to alcoholism, namely, poverty, want, and misery. In nearly all medicosociologic studies of alcoholism which it has been my privilege to read, I have found the stereotyped statement that poverty is an effect and not the cause of drunkenness. I cannot too strongly oppose this statement, for it is my firm conviction that alcoholism is fully as frequently the result of poverty as poverty is the result of alcoholism.

You surely do not expect me in this essay to give a recipe for overcoming poverty and want. This must of necessity be the work of the statesman, the social economist, and philanthropist, and will result from a universal strife after more social justice.

After this brief summary, what may we suggest in the line of prophylaxis according to our modern conception of alcohol as a medicosociologic disease? The first thing that would seem to me essential is to discover during child life, and particularly during school life, as far as it is at all possible, any inherited tendency to alcoholism in children. Primarily, this would of course be the duty of the family physician and later on of the school physician. In families without a physician, the family history, paternal and maternal, and alcoholic habits should be investigated by publicly appointed physicians with all the delicacy, secret-

ness, and tact necessary for such a task. The unusually nervous or irritable, anemic or underfed pupil, and the mentally deficient scholar would justify such an investigation more particularly. The parents' cooperation may be of incalculable value in the preventive treatment for such a child.

In cases where investigation proves that either one or both parents are addicted to drink, the state should have a right to remove the children from such dangerous environments until such a time as the parents have reformed their habits or the child's character is formed and it has become strong enough to protect itself.

The treatment of the child predisposed to alcoholism should be physical and moral. The open air school, more outdoor play, and as little home study as possible, ample nutrition if such is deficient, hydrotherapy, and in extreme cases suggestion-therapy, or hypnotism, should be resorted to. It goes without saying that in all children, but particularly in children from an alcoholic parentage, intoxicants in all degrees of potency should be absolutely excluded from the daily dietary.

The continuation of such a careful life with abstinence from all alcoholic drinks is of course essential in later years, no matter what career the young man or woman may have chosen. This formation of character of which I have spoken is the only safeguard against the temptation to drink with which the young man, or, to a lesser degree, the young woman in college, shop, factory, or society, is beset. The one and all-important lesson these young people must learn is that when overworked and tired out, rest and natural food and natural drink are the best remedies to overcome fatigue, and that an alcoholic stimulant acts only as a spur does on an overtired horse.

But I would be remiss would I not call attention to the fact that there is also a dietetic cause predisposing to alcoholism. It is not only lack of food which creates in many a craving for stimulants, and I say in all sincerity that bad cooking is indeed a predisposing factor to alcoholism. The doughy fresh white bread, the hot biscuit, the hot cake so dear to the American palate, and the hasty way of taking food, are all factors producing chronic digestive disturbances which many a man believes he can combat by taking alcoholic stimulants. In many the chronic desire for whisky is created thus. The remedy lies in better cooking. Let our girls learn how to cook, let us do away with evidently indigestible food substances, let us give to our employees enough time to eat and digest, and let us take time for these necessary functions ourselves.

Against the use of patent medicines containing alcohol, the long continued use of which leads not infrequently to as distinct a state of chronic alcoholism and as serious a one as that produced by partaking of alcohol in the form of whisky, wine, or beer, government supervision and the education of the masses are the only remedies. By government supervision I mean, of course, prohibition of fraudulent advertising, claiming cures which were never accomplished, etc.

The young man going out into the world should remember that the so-called American treating habit, considered an evidence of good fellowship, is thoroughly un-American, pernicious and detrimental to his physical, moral, and in not a few instances to his financial welfare. I have no hope that the use of alcohol as an occasional stimulant will be abolished within this generation or the coming one, but knowing that this treating habit has been the cause of many a young man, naturally temperately inclined, having lost self-control and become chronically addicted to drink, I would love to see a strong agitation against the treating habit throughout this nation. To use the language of a beloved teacher of mine, Prof. Beverley Robinson of New York, "let every man pay for and ask for his drink when he wants it, but let him also be an independent 'crittur' and not drink for goodfellowship when he knows it is hurtful to him physically or beyond his means pecuniarily. My feelings are in favor of treating, I humbly acknowledge, but my reason is dead against it."

This would be one of the prophylactic measures which I would recommend as essential to combat acquired alcoholism. Next to it, I believe in education and in temperance societies; not in the fanatical measures of the intolerant teetotaler or the sometimes absurdly unscientific teachings in our public schools about this matter, but in educating the young and the old in a rational manner about alcoholism, and most of all I believe in example.

If people desire to take wine, or beer, or diluted whisky, let them take it with their meals and they will drink a great deal less; let them particularly do away with the pernicious habit of ingesting alcohol before meals as appetizers in the form of cocktails. I believe there exists in England a society which adheres to the precept of never partaking of alcoholic drinks except with meals. This is a step in the right direction. The formation of temperance societies, I have already said, I encourage among professional as well as working men. These societies cannot be too numerous and I am glad to say that in this country as well as in Germany the physicians have taken the lead among professional men and have formed such temperance societies. Our friends the lawyers have not yet followed our example but there is hope that they will do so ere long.

The discussion of prophylactic measures would not be complete should I not say a word on the question of prohibition. This is a very dangerous path to tread, and if you permit me I will, before expressing my own views, give the opinions of men of much wider experience and greater knowledge. Our greatest authority on the subject is, I believe, the eminent and justly celebrated and honored Harvey W. Wiley, former chief of the Bureau of Chemistry at Washington. He says: "Until within a few years I have been opposed to forced prohibition. If man should never be subjected to any temptation, his stamina of character and power of resistance to evil would undoubtedly be diminished. This would be a very sad condition of affairs if at the same time the evil itself were not obliterated.

"In the last few years I have been so impressed with the evils of the excessive use of alcoholic beverages of all kinds that I feel at times as if universal prohibition could be nothing less than a blessing. At the same time I believe that the very moderate use of the very best old fermented and distilled beverages may be conducive to health and longevity if this use is not begun until the formative period of life is completed."

Prof. Simon Baruch of the Columbia University of New York is much more drastic in his conclusions, claiming that alcohol is neither food nor stimulant. He desires its complete removal from social life. Professor Muensterberg of Harvard has this to say on prohibition: "Prohibition puts a premium on the systematic violation of law and produces a form of corruption which is still worse than the corruption which irradiates from the licensed saloon. Further, it reinforces drinking in its most miserable and dangerous form. The moderate drinker is cut off, while the immoderate drinker is created. It abolishes light wine and beer, and opens wide the way for the worst kind of whisky. It eliminates every sound supervision and makes minors and inebriates the favorite customers. A clean surface appearance is bought at the expense of inner moral and mental destruction. Worst of all, the masses who feel the instinctive need of an anesthetic quickly find substitutes."

"I speak as a psychotherapist whose experiences cover the whole country, if I say that the spreading of cocaineism and morphinism, of sexual perversion and ruinous habits among the abstainers is alarming. But even on the surface any one can see to what degree of dulness on the one side and of vulgarity on the other side the masses are led if the means of physiologic relief are cut off from a strong, hard-working population. To fight intemperance by prohibition means to substitute one evil for another. We must institute a reform by slow education toward a moderate use of light wine or beer, with complete abolition of the present saloon and of the present disgusting habits, and that is the only way to permanent success in this country, as long as Americans remain Americans."

Now may I add in a few words my own conviction regarding prohibition? Like the distinguished Professor Muensterberg I question the wisdom of absolute prohibition in our present state of civilization. Could the Gothenberg system be carried out in the United States, I would, certainly favor it as a means of decreasing intemperance, and consequently crime and disease. This system consists in the manufacture and sale of alcohol by the government and giving the dispenser of alcohol a salary, so that no benefit shall accrue to him from the amount of alcohol he sells. The law strictly prohibits the sale of liquor to the intoxicated, the habitual drunkard, and to minors. I am almost tempted to suggest this method to some of our prohibition states—it would probably tend more to decrease intemperance than prohibition laws do now, as they have worked in Maine, for example. However, with a heterogeneous population like ours, the same laws are perhaps not applicable to every state. Prohibition has decreased crime in the South

among the negroes, while, if I am correctly informed, crime and arrests for intoxication are on the increase in Maine.

It is the same with individual states as it is with individual men and women; they have their idiosyncrasics, peculiarities, and different constitutions. Some people cannot take a teaspoonful of liquor without feeling the intoxicating effect, others cannot drink the smallest quantity without a desire for more than is good for them being aroused. That a low type of saloon is injurious to any community every one will admit. It would seem that in most of our states it will be difficult to enact and enforce strict prohibition laws. To create by a higher license a higher type of saloons and diminish their numbers must surely have a good effect. To sell alcoholic drinks to minors or intoxicated persons should be severely punishable. But all sham regulations which are sure to be violated, such as all Sunday closing, should not be enacted. Let the saloon be strictly closed during church hours on Sunday, but be allowed to open for certain hours in the afternoon and evening.

In treating the etiology of acquired alcoholism, we have already mentioned the very important rôle of psychotherapeutics to which the physician must sometimes resort if he wishes to treat the alcoholic successfully. But this must be preceded by medicinal treatment with a view to ridding the system of the alcohol. All alcoholic patients are poisoned, and in the language of my friend, Prof. Alexander Lambert of New York, "they must be unpoisoned before they can have a chance to go on as they should go on without their alcohol." I have no doubt that you are all familiar with Dr. Lambert's treatment of alcoholism, described in the *New York State Journal of Medicine* of January, 1910, and *The Journal A. M. A.* of Sept. 18, 1911. The specific of this treatment is a mixture of 15 per cent. tincture of belladonna, two parts, one part each of the fluid extract of xanthoxylum and the fluid extract of hyoscyamus. Here is the exact prescription for this specific:

R		
Tincture belladonnæ	62 gm.	ʒii
Fluidextracti xanthoxyli		
Fluidextracti hyoscyami	āā 3I gm.	ʒi

To avoid mistakes, I will copy the essentials for the treatment from Dr. Lambert's paper read before the New York State Medical Society: "From 6 to 8 drops of the specific are given every hour, day and night, until either the patient shows symptoms of belladonna excess, or with the cathartics about to be described, the patient has a certain characteristic stool. This specific is increased by 2 drops every six hours, until 14 to 16 drops are being taken; it is not increased above 16 drops. Usually an alcoholic can be given four compound cathartic pills at the same time that the specific is begun. After the specific has been given for fourteen hours, a further dose of C. C. pills is given, either two or four, depending on the amount of action obtained through the use of the previous dose. If these have acted very abundantly, only two are now necessary. At the twentieth hour of the specific, two to four more C. C. pills are given and after these have acted, should the patient begin

to show abundant green movements, an ounce of castor oil should be given, and a few hours later the characteristic thick green mucous, putty-like stool will appear. Usually the specific has to be continued, and at the thirty-second hour two to four C. C. pills are again given, and a few hours later, the castor oil. The specific can then be discontinued.

"Of course, in treating alcoholics, one finds in the majority of cases the necessity to stimulate them and to give them some hypnotic, but this can be done without interfering with the hourly administration of the specific. During the first twenty-four hours, with the older patients, or with one in the midst of his spree, there should be given whisky in 1-ounce to 2-ounce doses, four or five times with milk. This should not be continued after the first twenty-four hours, and in young robust subjects it is usually not necessary. The belladonna symptoms which would cause one to cut off the specific and wait until they have subsided before beginning again are: extreme dryness of the throat or the beginning of delirium as shown by an insistence or incisiveness of speech with the insistence on one or two ideas, or belladonna rash, or the general flushed red dryness or heat under the skin, of which they will complain. An alcoholic is more prone to react to belladonna than is the morphinist, but if they are sensitive to this drug, they will show it in the first six or eight hours of the treatment.

"After patients have been through this treatment, the desire for alcohol has ceased, and for the next few days it is simply a question of feeding them, of giving them some tonic, and of seeing that they sleep at night. It is noticeable, however, that following this treatment most of the coal tar hypnotics do not act well. The best one is small doses of trional with codein, but the older drugs, chloral and bromids, act much better. A non-alcoholic tonic will soon set these patients on their feet physically, though whenever possible it is desirable that they should be placed where they can put themselves in as good physical condition as possible."

It goes without saying that such treatment is difficult to carry out at home, and a sanatorium or special hospital where patients can enter voluntarily, or be ordered to enter by judiciary proceedings, is absolutely essential to the solution of the alcoholic problem.

This brings us to a very important subject which has recently occupied the minds of leading specialists and philanthropists in New York City; that is to say, the permanent saving of the dipsomaniac by committing him to live and work in the inebriate farm colony. The purpose of this colony is not only to take care of those committed to it by the courts, but to become an institution to which the inebriate would desire to come voluntarily and not wait until he is committed there. The New York law provides that the Board of Inebriety shall do everything it possibly can to get the man on his feet and keep him there, and for this reason a force of field officers will work under direct management of the Board as investigating officials before commitment to and after release from the farm. It is justly believed that a committee which will treat its

inebriates not as individuals to be punished but as patients who must be treated and cured in such a farm colony, will be finally the financial and moral gainer.

New York spends annually \$1,750,000 for the arrest and care of cases of intoxication, \$92,000 to try these cases in the magistrates' courts, about \$250,000 for custodial care by the Department of Correction of persons arrested for intoxication, an average of \$1.86 a day to hospitals in Manhattan and the Bronx, besides the sums expended by the Department of Public Charities on some 2,000 cases. I believe it is a safe estimate that the various city and state governments of the United States expend at least \$20,000,000 on the arrest and care of and court expenditures for people arrested for overindulgence in alcohol.

There is absolute unanimity of opinion among alienists that men may be saved to useful lives through the operation of state inebriate colonies, and among the heads of institutions it is believed that the large sums now expended in charity and civic expenses will be saved to municipalities, while both give assurance that such farms will greatly reduce the number of insane and criminals.

The marriage of alcoholics should be prohibited by law; but since this will very rarely prevent them from seeking sexual relation I plead with all the earnestness I am capable of for a universal law whereby the unredeemable alcoholic, whether male or female, rich or poor, shall be rendered sterile. It is only thus that we can prevent him from procreating children predisposed to alcoholism and diseases concomitant with such a predisposition. The individual subject to violent alcoholomania and who is beyond treatment should be considered an insane individual and confined in an asylum and rendered sexually sterile.

VENEREAL DISEASES

I have dwelt at some length on the first problem because it is in not a small degree responsible for the two following ones. We know that alcoholism very often leads to venereal excesses. The alcoholic loses judgment and moral restraint. Hence, we very often find that the young man contracts venereal disease during a debauch. Of the relation of alcohol to tuberculosis we will speak more fully later on.

Statistics regarding venereal diseases are as unreliable as those of alcoholism. We all know of the frequency of venereal affliction among all classes of society, among men and women, and, alas, also among children. There are, of course, a few modern conceptions of the venereal problem of which we may speak. First of all, the sanitary control of this class of diseases by the official boards of health. We have started in New York recently to classify venereal diseases among the infectious, communicable, reportable, and preventable diseases. Here are the resolutions passed by the New York City Board of Health a few months ago:

WHEREAS, The venereal diseases are infectious, communicable, and preventable, and constitute a serious menace to the public health, thus properly coming under the charge of the public health authorities, and

WHEREAS, It is well established that no administrative control of such diseases is possible without a system of notification and registration, associated with provision for the municipal care of patients unable or unwilling to place themselves under proper medical care and to take the precautions necessary to prevent the infection of others, be it therefore

Resolved, First, that on and after May 1, 1912, the superintendent or other officers in charge of all public institutions such as hospitals, dispensaries, clinics, homes, asylums, charitable and correctional institutions, including all institutions which are supported in whole or in part by voluntary contributions, be required to report promptly the name, sex, age, nationality, race, marital state, and address of every patient under observation suffering from syphilis, in every stage, chaneroid or gonorrheal infection of every kind (including gonorrheal arthritis) stating the name, character, stage, and duration of the infection, the date and source of the contraction of the infection if obtainable.

Continuing, the resolutions request all physicians to furnish similar information regarding private patients under their care, except that the name and address of the patient is not required. The Board of Health will undertake, without charge, to make the necessary bacteriologic examinations and tests for the diagnosis of these diseases, and to distribute the curative sera, but only on condition that the data required for the registration of the case be furnished by the physician treating the patient. The Department will also provide and distribute circulars of information in relation to these diseases.

This is a vast step in advance and will not only lessen the gonorrheal infections in infants and children, and the consequent blindness, but will also help in a measure, the control of this disease and of syphilis in adults, by timely diagnosis and judicious treatment. The disposition of the Health Department to make gratuitous bacteriologic examinations and Wassermann tests for venereal afflictions will doubtless help very materially not only the therapeutic but also the prophylactic measures.

To my mind these admirable resolutions of the Board of Health would be strengthened in their efficiency if the afflicted could be assured, and I mean particularly that class of patients who are dependent on free treatment in public institutions, that the records at the Health Department concerning venereal diseases will not be open to inspection by the public and that only legally authorized individuals can have access thereto. The venereally afflicted patient without means should be made to feel that he is treated by the official medical authorities with the same secrecy as the private patient of physicians. To my mind it should distinctly be specified by law under what condition the records of the Health Department concerning communicable and infectious diseases may be inspected, and by whom.

The importance of educating young men and young women regarding sex relation has been so often advocated that I think we do not need to dwell on it here except to emphasize its importance in a few words by saying: knowledge of a possible peril confers in this instance the greatest motive power for prevention. In connection with education in sexual relations and venereal diseases in school and college, I would suggest that a community of any size should have a public museum of hygiene including wax models, showing not only the physiologic development of the

normal child, but also the results of venereal vice. Nothing is more demonstrative and educating than such ocular evidences. May I say right here in parenthesis that we cannot expect parents to be the educators of their children in all that pertains to these important subjects without having given the father and mother an opportunity to educate themselves.

What other modern conceptions do we have concerning venereal diseases? Physicians and lawmakers are almost unanimous in the opinion that people afflicted with syphilis or gonorrheal diseases in the infectious stages should not be permitted to marry. The willing or conscious communication of a venereal disease to any one should be punishable by a severe fine and an incarceration until the disease is cured.

Knowing that the so-called "social evil," which I prefer, however, to call the "social ill," is in a very large measure responsible for the spread of venereal disease, we must devote a few words to this topic. But since I have chosen to change the name from *evil* to *ill*, let me tell you briefly what led me to this conception. The general understanding of the word "evil" implies that the perpetrator of the act which is supposed to be an evil one is an evildoer or criminal. I believe it is neither just, humane, nor even consistent to call these offenders, male or female, criminals in every instance. Before an audience of this kind I do not need to state that there are numerous cases in which the unfortunate woman is really innocent, if not before the laws made by man, at least before the higher divine laws. That there are also instances when the other sex, the innocent and unknowing youth, has fallen a victim to the experienced, unscrupulous courtesan, often old enough to be his mother, is also too well known to need detailed mention.

When not applied to physical conditions, the word evil is usually understood as wicked conduct or criminal disposition, while the word ill or illness means a derangement and an unwholesome condition. By rights, we should not even call prostitution *the* social evil or ill, as it is by no means the only one, for surely alcoholic intemperance and gambling must also be considered social evils responsible for fully as much misery as prostitution.

Presuming, then, that you will grant me the privilege of substituting the name "social ill" for "social evil," what definition would I wish to give of this term in order to convey in concise words my reasons for the change? I would say the social ill is an abnormal, or, figuratively speaking, a pathologic condition which results from disturbances or failures of sociologic functions of the individual, for which in few instance the individual alone, but in the majority of cases our social fabric, is responsible.

Let us now rapidly trace some of the modern conceptions of the etiology of prostitution. I cannot, nor will I, subscribe to the cruel statement made by some sociologists and syphilographers that many women are born prostitutes. There is no evidence for this assumption. On the contrary, from the experience I had with this class of cases, when I was in general practice, I am willing to testify that the majority of

these unfortunate women, when they are mothers, work and slave that their daughters may have a happier lot than was their own.

All physicians know, of course, that just as there are boys born with an adherent prepuce, so are there girls born with an adherent clitoris. When these trifling physical defects are not corrected they may lead to the habit of masturbation in both sexes and later on to abnormal sexual appetites. When operated on, the acquired pernicious habit usually ceases. But if, as is asserted by some authorities, this physical defect predisposes the female child to prostitution and the male child to corresponding abnormalities, then by all means let us make it a practice to have every child, male or female, carefully examined and treated for such possible defects by a competent physician.

Hysteria is also mentioned as a predisposing cause. Any hysterical manifestation in a child should have timely and prompt treatment. All other factors in the etiology of prostitution are simply social. Child labor, underpaid woman's labor, misery and poverty are recognized to-day by all sociologists as the principal predisposing causes to prostitution, and there is but one remedy for all: child labor must be done away with and the woman who is dependent on her own resources must be enabled to earn enough money to support herself respectably. When such a policy will become universal and not be confined to one state or one country, then the very praiseworthy effort on the part of the United State government to abolish the white slave traffic will be crowned with success, because there will be no slaves to traffic with.

Last, but not least, let me not forget that prostitution is as much, nay, even more a man's problem than a woman's problem. It is we, the so-called stronger sex, the creators of our social fabric, the lawmakers and those who enforce the law, who are responsible for this blot on civilization. The fact that prostitution existed in antiquity is no excuse for its existence to-day. There is much, much for us men to do, whether we are physicians, social workers, or plain citizens fulfilling our tasks as such toward bringing about a happier and saner state in regard to our sex relations and our attitude toward our sisters, unfortunate, but in my opinion not deserving the name "fallen."

Let me frankly state that one of the things I conceive of as tending to do away with the social ill would be early marriages and small families. No child should be brought into this world physically, mentally, and socially so handicapped that its rise to a true, sane, sound, and useful member of society is an impossibility.

What can we do to-day to help stem the misfortune, disease and misery brought about through the social ill? Take to heart what I have already said and carry out these recommendations gradually and persistently and I am sure you will help in the sane solution of the problem. Where prostitution with all its evil influences exists, use repressive rather than oppressive measures, and above all hold out the helping hand to those who wish to be helped. Open, if you can, to-morrow a house to which the woman of the street, tired of the life she has been leading, may escape; where she will be received with open arms by sisters and brothers,

the children of the same God; where, if she is diseased, she can be healed; where, if she is uneducated and uncultured, she can receive education and culture; where she can forget the past and where she can learn to look to the future and to her reestablishment as a respected member of society with absolute certainty. But in the name of mercy, I beg of you not to call this house a Magdalen Home; call it a house, or simply a home, call it anything but that. It is my privilege to be one of the incorporators of a house in New York City such as I have just described; we call it the Waverley House.

I know the pessimists will tell me you can never, never, reform a prostitute. Well, perhaps not all, but if I tell you the results of two years' work at Waverly House, in how many instances we succeeded in curing the social and physical ill of these women and created opportunities for work and employment in other spheres, you will pardon my optimism. Of 300 women who passed through this house, either by self-commitment or on probation granted by the court, 119 have changed their previous mode of life, have become happy, honorable, and useful members of society. Miss Maude E. Miner, an official probation officer, who is at the head of this institution because of her experience and devotion to the cause, has been in constant communication with these 119 girls. Every letter from them expresses their gratitude for having been enabled to leave a life in which they were so thoroughly unhappy. And last, but not least, this place of refuge for those unfortunate women means in many instances freeing them from the men who lived on their shame and were so often responsible for their enslavement.

One more word on what we can do now. Every general hospital of any size should have a ward set aside for the treatment of venereal diseases. I do not believe in special hospitals for the treatment of venereal diseases. Few would voluntarily enter. But if it were known that any one could be treated in a special ward of a general hospital, that he could be sure that his identity would only be known to the physicians and higher officials of the hospital, most of the objections which the venereally afflicted man has to-day to hospitalization would be done away with and prophylaxis and proper therapeutics would help to diminish the fearful consequences of hidden and neglected venereal diseases.

TUBERCULOSIS

My last subject is tuberculosis, although it is not the least. Statistics are just a trifle more reliable concerning tuberculosis than they are regarding alcoholism and venereal diseases, and we can say something definite of the magnitude of the problem. From available statistics it is estimated that 150,000 people die annually from tuberculosis in the United States, and the National Association for the Study and Prevention of Tuberculosis reports that more than \$14,500,000 was spent in fighting tuberculosis during the year 1911. By far the largest item of expense was that for sanatoria and hospitals. For the erection of institutions of this kind, more than \$11,800,000 was required; dispensaries for the examination and treatment of tuberculosis spent \$850,000, and

associations and committees in their educational campaign against tuberculosis spent \$500,000. The remaining \$1,300,000 was spent for treatment in open air schools, prisons, and hospitals for the insane. Appropriations of more than \$10,000,000 for tuberculosis work in 1912 have already been made by state legislatures and municipal and county bodies.

To say that at least \$50,000,000 is invested in buildings and equipments in the United States by state, municipal, and private philanthropy for the sole purpose of caring for the tuberculous poor would be a low estimate, and in this sum is not included the money invested in sanatoria for the well-to-do. The \$15,000,000 above mentioned for running expenses likewise does not cover the actual money expended for the care of the consumptives of this country; still less does it include the economic loss to our country by the premature death of tuberculous individuals.

Of the estimated 150,000 who die annually from tuberculosis in the United States, I venture to say 50,000 have been bread winners, and estimating the value of such a single life to the community at only about \$1,500, we have a loss of \$75,000,000 each year. Another third of the estimated number, I venture to say, represents the children at school age. They have died without having been able to give any return to their parents and to the community. Making the average duration of their young lives only seven and one-half years, and estimating the cost to parents and to the community at only \$200 per annum, the community loses another \$75,000,000 because it has not prevented a preventable and curable disease in childhood.

I am not trying to figure in dollars and cents the loss of little babes who die in infancy. The suffering thus caused to parents can no more be calculated than the suffering, misery, tears, and agony of those afflicted with the disease itself. But I trust that the cold figures I have given showing the economic loss, besides the suffering which is caused in body and mind to untold numbers because of this disease, will inspire you and me to look a little closer into the origin of tuberculosis, and if possible to inaugurate more efficacious prophylactic and curative measures, so that we may have more frequent cures and fewer relapses.

To what degree venereal diseases are responsible for tuberculosis cannot be statistically proved. On the other hand, we know from statistics of French sanatoria for tuberculous children that 25 per cent. of the non-tuberculous parents of the children admitted were alcoholic to a greater or lesser degree. In my service at the Riverside Hospital-Sanatorium where, it is true, I do not receive the very elite of patients but many forced-in cases, not a few picked off the street or from low-class lodging houses, I have among my male patients 66 per cent. who acknowledge being addicted to the use of alcohol. Whether they became tuberculous because of alcoholism, or alcoholic because of being tuberculous I am not prepared to say. The belief that tuberculosis can be cured by whisky and prevented by the same beverage, is still a prevalent one and needs combating.

Direct bacillary transmission of the tubercle bacilli from parent to child cannot be denied, although I admit that it is of rare occurrence. Post-natal infection, on the other hand, from either mother or father is, alas, a most frequent cause of tuberculosis. The child of a tuberculous parent comes to this world handicapped by an inherited physiologic poverty and then being constantly exposed to a postnatal infection through the close proximity of the tuberculous parent, it has little chance to survive. If it does survive it rarely reaches adult life. If in infancy it has the misfortune of receiving the milk from a tuberculous cow, its chances of dying from tuberculous are increased by 10 per cent.

In connection with this inherited physiologic poverty as a primary cause of tuberculous predisposition, I should like to discuss for a few moments a subject which I have not seen mentioned in any of our old or modern text-books on tuberculosis. This predisposition has, I believe, as much a social as a physiologic basis. In taking the history of tuberculous patients, I have made it a practice for years to always ascertain the size of the family from which the individual comes and whether he was the first, second, third, fourth, fifth, etc., born of the family. This careful history-taking has revealed the fact that the great majority of tuberculous individuals coming from large families were the younger ones. It is nearly always the latter born who contract tuberculosis.

There is no doubt in my mind that perhaps the age of the father, but most frequently the system of the mother worn out by repeated pregnancies, can contribute to the physiologic poverty of that latter born child. This child comes to the world handicapped physiologically. In many instances, when the family, because of the number of children, has been reduced to a state of relative poverty, the latter born children cannot receive or have not received either the good care or the good food which was given to the first born at a time when there were not so many mouths to feed. This condition might be considered the sociologic reason of the child's predisposition to tuberculosis added to the physiologic causes above described. I have in my records a number of such latter born individuals who had become tuberculous in adult life when there was no tuberculosis in their family, but the personal history revealed always a state of health below par from early childhood.

On the well-known direct sources of infection of tuberculosis such as sputum, bacilliferous droplets, etc., I shall not dwell in this paper. There is only one recently brought forward which might be considered and I speak of it only because I disapprove of it. Poncet of Paris claims to have found the tubercle bacilli in the perspiration of consumptives. His experiments have not yet been corroborated sufficiently to make it necessary to consider this possible source of infection an absolute fact. If it really occurs, the cases from which tuberculosis is contracted from this source are surely exceedingly rare, and in view of the existing phthisiophobia, I do not think it is best to scare the public and increase the prejudice against the tuberculous by saying that the touch of their skin might give rise to the disease. Ordinary cleanliness of the skin of the

phthisical patient is certainly sufficient protection against this source of infection if it does exist.

Now, as to some of the modern medicosociologic conceptions of ways to abolish the predisposing or antenatal causes, the postnatal infection and the frequent relapses responsible for the propagation of tuberculosis. Let me discuss first the frequent relapses. From a financial standpoint, every patient discharged as cured from a public institution, who relapses, represents a loss of from \$200 to \$500 to the community, because the money which had been spent for his cure has been spent in vain. Why do we have so many relapses in spite of the great financial sacrifices which our states and municipalities make for the cure of tuberculosis?

What is the cause of these relapses and how may we remedy them? When a patient, after a six to eight months' sojourn in a hospital, is discharged as a cured or arrested case and is obliged to return to the same unhygienic environments or resume the same occupation which, combined or singly, were responsible for his contracting or developing tuberculosis, the chances for him to become tuberculous anew are indeed great. The patient discharged from an institution should be the subject of a most careful supervision and control. Those of us who have some experience in tuberculosis know only too well that six or eight months' treatment rarely suffices to cure the patient absolutely. Thus, if a municipality or state does not wish to spend about one-third of the tuberculosis appropriation in vain, let them establish what I would like to call intermediate stations where all kinds of occupations may be pursued, but under exceptionally good hygienic conditions, with as much outdoor life as at all possible and certainly outdoor sleeping so as gradually to harden the patient discharged from the sanatorium, and make him resistant to a new invasion of the bacilli. In the majority of instances he may then safely return to his former occupation, and with the sanatorium training and his life in the intermediate station, become again a most useful member of society and bread winner.

What may we do to abolish the predisposing causes and general postnatal infections responsible for the propagation of tuberculosis? Every member of any family in which a tuberculous patient has been discovered must be examined and periodically reexamined, and if found tuberculous he must be treated and cared for. Such families, more than others, need sanitary supervision. If the bread winner has been removed and the family is poor, special relief must be given, for the underfed and badly housed are more prone than any others to contracting tuberculosis. We should strive to discover every possible center of infection and make it innocuous, but in thus persecuting tuberculosis we must not persecute the tuberculous.

Our social reformers will tell us: the first thing you physicians must do is to prevent the tuberculous from marrying. This is easier said than done. We know, of course, that there are a number of states in which a certificate of health is demanded before a license is issued, and recently some brave clergymen, foremost among them the Very Rev. Dean Walter Taylor Sumner of the Protestant Episcopal Cathedral of SS. Peter and

Paul, of Chicago, have declared that they would bar all marriages unless the couples were armed with a physician's certificate saying that they have "no trace of insanity, tuberculosis, or other communicable disease." If I have the quotation correct, I would object to the wording of this declaration for, if the reverend gentleman really means that he will not marry any one who has even a trace of tuberculosis, he will have a chance of performing the ceremony relatively rarely. What the old German *Geheimrath* said many years ago still holds good. I refer to the often quoted words *Am Ende haben wir all ein bisschen Tuberkulose*, which might be freely translated, "After all we all have or have had a little tuberculosis."

A mere trace of tuberculosis should not bar any one from marrying and propagating, but with a distinctive lesion, likely to become acute at any moment, or with a very strong predisposition, marriage and procreation should be deferred until the prospective husband or wife is cured. I cannot speak for the experience of others, but as for myself in a good many years of consultation practice, I have had occasion to prohibit marriage a good many times. Sometimes those who had sought my advice obeyed it, more frequently they did not and I have now come to the firm conviction that neither state law, clergyman's protest, or physician's advice will prevent people from coming together as husband and wife if they want to. I grant that there are exceptions, but these exceptions are few.

A somewhat easier task is it when we are confronted with a tuberculous married man or woman whom we desire to convince that as long as he or she is actively ill with the affliction they must not have any children. Such advice the average tuberculous patient is willing to take, but of course failures are frequent. What are we to do? This is one of the most important phases of eugenics. We spent last year nearly \$15,000,000 for the cure and prevention of tuberculosis in the United States and we still lose annually 150,000 people from consumption, which represents an economic loss of \$150,000,000. This will continue as long as we allow conditions to prevail as they are now almost universally.

Has the time not come for a radical and energetic policy for dealing with the various phases of the tuberculosis problem, including the procreation of a tuberculous race? Statesmen, lawmakers, city fathers, school authorities, employers, philanthropists, physicians, and the people at large, all can help in this holy war against a common foe more terrible, more destructive, more costly than any war known in the history of men.

Besides pleading with all the earnestness I am capable of for all means to combat tuberculosis, for which others and I have pleaded before, such as early diagnosis, compulsory registration, periodic physical examination of all school children and college students, the establishment of maternity sanatoria, children's sanatoria, sanatoria for early cases, hospital sanatoria for the advanced cases, the forcible segregation of all advanced or early cases when by their condition or conduct they are a menace to the community, dispensaries, labor bureaus for the tuberculous, agricultural and horticultural colonies, better housing, better

home hygiene, better ventilation in factories, stores, offices and work shops, state insurance against accidents, old age and disease, including tuberculosis, periodic physical examination of all employees, official and private, for tuberculosis, supervision of food supplies and housing, abolition of child labor, more open air schools and colleges, utilization of city roofs for playgrounds, more outdoor play for all children, and education in popular hygiene for all people, I plead with you for vasectomy for all tuberculous male patients who are willing to submit to this operation. I would make this operation obligatory for any one who is acutely tuberculous and insists on marrying. I would advise the ligation of the fallopian tubes for all female patients in the same situation, or similarly afflicted. I would teach even slightly affected tuberculous parents or married people not only all the details of prophylaxis so that they may not infect each other, their children, or others, but would make it also a sacred duty to teach them how not to procreate while either one of them is acutely afflicted with the disease. To this end I would go so far as to urge parents, even when they feel themselves apparently well and strong and recovered from a tuberculous lesion, not to decide on having a child without both having submitted themselves to a careful physical examination. Only when found in real good health as a result of a careful examination by a competent practitioner, should they feel that they have a right to procreate a race.

I have already expressed my opinion to the effect that for the non-cured syphilitic and the unredeemable alcoholic the procreation of his type should be made impossible. That I dare to include in this class the actively ill tuberculous individual may sound revolutionary and to some it may seem a shock, but I know that many in their heart of hearts will agree with me. To make of the human race beings strong in health and vigor, sound in mind and body, free from unnecessary care and preventable diseases, should be a religious duty of the physician of this age.

To end a paper of this kind with figures may seem tedious, but we are pleading at this time for a federal Department of Health whereby the problems with which I have endeavored to deal, although only too inadequately, shall receive the deepest study and sound consideration with a view to their solution.

As stated above, the people of the United State spend annually \$20,000,000 for taking care of the drunkard. This expenditure does not include the maintaining, often for a life time, of 25 per cent. of all the insane, epileptic, or feeble minded whose disease may be traced to alcoholism; nor the maintenance of 25 per cent. of all criminals in the work-houses, reformatories or prisons, who committed their crimes under the influence of alcohol. The cost of venereal diseases is beyond calculation. A large percentage of the venereally diseased land in the insane asylum and thousands of little children are rendered blind and helpless forever. The human sorrow caused by the venereal peril is far greater than all the money sacrifice, and the same may of course also be said of alcoholism and tuberculosis. To help to diminish the sorrow and suffering caused by all these diseases, to decrease their virulence, to study their cure, to

help to save to the commonwealth, that is to say to the people at large, the thousands of millions of dollars which these and other preventable and curable diseases cost, we have asked for the establishment of a federal Department of Health. This is the one medicosociologic conception without the realization of which we shall be unable to solve the three great problems before us.

May I conclude this all too lengthy paper with one more thought? After having given you some of the modern medicosociologic conceptions of the three great diseases of the masses, let me state as "finale" my conception of the modern physician, as I see him rising before me. The physician of the future will have chosen his profession because of his devotion to science and humanity; he will be physically and mentally equipped for the task. Our social fabric, politics of state and nation, will have changed and our material wealth, because of greater honesty, greater efficiency, and fewer untimely deaths, will have increased at least to such an extent that the naturally gifted boy or girl who feels in himself or herself the divine calling to be a physician, be he or she of poor or rich parents, may be educated in the state university at state expense. After careful preparation and study and years of hospital service as intern, a remunerative position will be assured to this well-trained physician. He will take care of the sick as an officer of the state, paid by the state and not dependent on the fees received from patients. He will have helped in saving the nation an expenditure of untold millions by guarding the people's health, by preventing epidemics and endemics, by teaching the people how to live healthy, happy lives and how to be strong and vigorous in mind and body — men and women in every respect an image of their creator, noble citizens of a great republic. This because the ideal physician will at last have come to his own, a conqueror of disease, a savior of his fellowmen, himself an example of the highest type of man. Let us hope that he may appear on the scene before you and I lay down our arms.

TUBERCULOSIS WORK IN EUROPE *

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The Irish have an expression that "far off cattle have long horns," which is only another way of expressing the thought that "distance lends enchantment to the view." Because European countries are older and more particularly for the reason that many of them have been engaged in the warfare against tuberculosis longer than we have in this country, we have very naturally looked to them for leadership and assumed that their methods were right and have blindly followed them without question. This attitude on our part has led us into serious blunders. This

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assertion is based on a recent investigation of tuberculosis work as it is being conducted by our transatlantic brethren, and applies with peculiar force to our slavish adherence to European standards of architecture in the construction of tuberculosis sanatoria.

The statements herein made are based on definite data, and the criticisms are unprejudiced. I found that while we have an exaggerated view of the progress they have made, they likewise have a distorted view of our work, and in both instances, the mistakes which each have made have been overlooked, and the really meritorious things done have been magnified. Viewed at close range a better perspective is gained and defects observed that could not otherwise be discovered.

I had already made quite a thorough investigation of actual conditions in this country, particularly from the sanatorium standpoint, and found there was much knowledge that could only be gained by personal investigation.

The primary object of my recent visit to Europe was to investigate actual working conditions, particularly from the standpoint of sanatorium construction and treatment, and incidentally to attend the International Tuberculosis Congress at Rome. What I have to present is a report on the conditions as I found them, based on rather an intimate personal experience with the work in this country.

Until within the past year Germany has taken the lead, not only in scientific work, but in provision for sanatorium treatment. Germany has more sanatoria and has made greater advance in prevention and placing the early cases under treatment than any other country in the world. During the past year Great Britain has passed what is known as the National Insurance Act out of which is appropriated \$7,500,000 for tuberculosis work alone. The plan proposed is the most comprehensive thus far attempted by any government, and the appropriation larger. The act provides for compulsory notification, sanatorium treatment for the curable, hospital care for the incurable, regulation of milk-supply, partial support of family during invalidism, special provision for infected children, increased attention to education along health lines in schools and colleges, and better houses for the poor. The total amount of funds available for this whole scheme is \$12,000,000 for the first year, which on a per capita basis would be equivalent to about \$30,000,000 for this country. The committee which has been appointed to work out the plans in detail recommend, among other things, that a dispensary be provided for each 150,000 of urban population, and that sanatorium provision be made on the basis of one free bed for each 5,000 of population.

Perhaps a better idea of sanatorium conditions can be obtained by giving a detailed report of a few of those I visited.

Mt. Vernon, Northwood, England, accommodates 150 patients; none but early cases admitted; the outlay very elaborate and extravagant; total cost \$6,000 per bed. It was built by a rich diamond miner of South Africa. Has no endowment and must be supported by subscription. Magnificent buildings and grounds, including large and well lighted laboratory, but no equipment to speak of. Can only do ordinary labora-

tory work. Treatment only hygienic. It is a serious question whether this institution can be maintained much longer by public subscription.

King Edward Sanatorium, Midhurst, sixty-five miles from London. Built by rich friend of King Edward the Seventh, who allowed the use of his name without knowing the plans in advance. No one knows how much it cost, but reputed to be not less than \$10,000 per bed. King Edward did not know what had been done until he was asked to dedicate it. It is said he was amazed and outraged when he saw what had been done in his name, and only barely repressed publicly expressing his disapproval. In private he did not hesitate to say that it was a stupendous piece of folly, and regretted exceedingly that his name should bear the odium of being connected with it. This is one of the English institutions which is most frequently referred to and which has been accepted as the ideal standard by many who are not familiar with the facts. This sanatorium is in reality a monument to the King and only incidentally for the cure of tuberculosis. It is the most conspicuous example of extravagant folly in the whole history of the tuberculosis movement.

Frinley Sanatorium, Sussex County, adjunct to Brompton Hospital, London. Located three miles from railway station in pine woods. Rough, unproductive land. Location unsightly. Built very much on same lines as Mt. Vernon, Northwood, only not so expensive. Cost about \$3,500 per bed. Graduated labor distinguishing feature. Apparently logical, and made possible because none but early cases are admitted. Institution new. Grounds rough, making vast amount of work necessary. It is questionable whether the plan of graduated labor can be conducted after improvements are all made, as the land is not suitable for farming, excepting at enormous expense for subduing and fertilizing.

Benenden Sanatorium, sixty-five miles from London; for industrial classes only. Eight miles from railroad. Unforbidding location. Buildings economically constructed, costing, including land and equipment, \$750 per bed. Graduated labor. Mostly farm and garden work. None but incipient cases received. Treatment up to date so far as finances will permit. Model institution of its kind and the only one in Great Britain built along economic lines.

There are numerous small sanatoria throughout Great Britain, both private and public, but none of them doing more than ordinary work. Private sanatoria are for the most part rather cheap affairs doing crude work and conducted more on the boarding house plan than as scientific sanatoria. The institutions specified, particularly the more expensive, all have good laboratories, but little or no equipment or funds to conduct them. The same is true of maintenance in every particular. The King Edward and Mt. Vernon, Northwood, are instances of rich nabobs glorifying themselves by erecting monuments to themselves under the guise of philanthropy and letting the institutions struggle for an existence.

There is no factor in the treatment of tuberculosis either from a scientific or economic standpoint of more importance than sanatorium architecture and none which has received less attention or in which more unscientific and economic blunders have been made. England copied

Germany's mistakes and we have copied the mistakes of both countries. The most serious and expensive mistake which has been made in the tuberculosis propaganda throughout the world is in the irrational and extravagant expenditure of money in the erection of massive buildings for the treatment of tuberculosis. The public have become so accustomed to every philanthropic outburst being associated with some palatial building that it is high time we should urge that the current of philanthropy find expression in the modest and comprehensive scheme of practical medical men, rather than in the grand and ambitious methods of the builders. It is a strange anomaly that charity patients are in many instances provided with better accommodations than even the well to do could afford if these institutions were conducted on a business basis. Such a plan is as irrational as it is unscientific, and has a tendency to break down the whole system by unnecessary expense and it is to correct just such mistakes as have been made, and will continue to be made, until the public have a better understanding of the necessities of the situation, that makes it necessary in connection with the tuberculosis propaganda to conduct a campaign against such extravagant and irrational methods of applying the treatment. There are other large expenses connected with the campaign against tuberculosis and all the funds at our command should not be exhausted in building sanatoria, which is only one factor in the warfare. Where there are so many things to be done we should conserve our resources. They certainly should not be exhausted or wasted in the construction of buildings, which are not only not needed, but are worse than useless. Thus far in all countries sanatoria have absorbed the major part of the funds appropriated, leaving little or nothing for anything else, not even the support of the institutions themselves.

I would not feel so free to criticize after having been treated so courteously by the officials of these several institutions were it not for the fact that I find that those in charge as well as physicians and sanatorium officials everywhere are unanimous in their condemnation of this extravagant expenditure. This being true, it is interesting to know how the custom became established.

Brehmer, Detweiler and other pioneers in the sanatorium movement, although advocates of fresh air, at first had rather crude and imperfect ideas as to its application, which led them to make many mistakes judging by present standards. One of these was to follow the conventional hospital plan of architecture. As a result all the earlier institutions are massively built and only with a view to applying fresh air during the waking hours. As the movement progressed medical men saw that the massive building was irrational both from a scientific and economic standpoint, and set about to devise simpler styles of architecture. This has necessarily taken a number of years to accomplish, and there is much yet to be done before ideals are reached. In the meantime the tuberculosis sanatorium became more popular. The demands of the situation became more and more apparent with the result that philanthropists came to the aid of many communities in supplying all or part of the funds necessary for their construction. Instead of consulting practical sana-

torium officials and keeping pace with the rapid progress made by consulting practical men they invariably placed the construction of these institutions in the hands of architects who knew nothing of the scientific demands of the situation, with the result that palatial monuments to the donors have been erected, instead of sanatoria for the sick. The result has been to establish standards that others have blindly followed on the assumption that practical men were responsible for this style of architecture, hence it must be necessary. It is a serious question whether or not these so-called philanthropists have not done the cause more harm than good.

The problem of housing tuberculous patients is so new and radically different from the housing of any other class of patients that it is not surprising that those charged with the responsibility of the expenditure of public or private funds are at a loss to know how to proceed. These men are usually laymen and very naturally the first step they make is to visit institutions already in existence. These have for the most part been unnecessarily expensive. The result is that these mistakes are duplicated where there are sufficient funds at their command, or the whole plan is abandoned where there is not. An illustration in point. Five years ago the legislature of a neighboring state made an appropriation of \$75,000 for a state institution. The Board of Control was composed of three intelligent laymen. They had absolutely no conception of how to proceed and very naturally visited some of the elaborate institutions in our eastern states. They found that no state had an institution that had cost less than \$250,000, and many of them much more. The same was true of other sanatoria, whether public or private. They had had great difficulty in securing the apparently modest sum of \$75,000 and knew that it was utterly useless to attempt to secure a larger appropriation, hence were about to abandon the whole enterprise. I was called in consultation and insisted they had sufficient funds to make a good beginning if they were only expended properly. They were advised to construct simple, inexpensive buildings. My advice was followed and within less than a year they had an institution in operation for the accommodation of 100 patients at a total outlay for lands, buildings and equipment of \$90,000. With the experience since gained. I am sure this institution could have been duplicated for even less. We are indebted to an English physician for suggesting the sanatorium treatment; to the Germans for systematizing it, but it is left for the practical Americans to simplify it and put it on a more economic basis.

If any of these extravagantly built institutions had been endowed with what has been spent uselessly in buildings it would be amply sufficient to support them liberally and still allow a good margin for scientific research. This wasteful extravagance is the result of the dominating influence of the men of money over the men of science.

The application of our present knowledge of tuberculosis is practically a new proposition, and it is to be expected that the inventive genius of the American will work it out to better advantage than the less inventive and less adaptable Europeans. As a matter of fact the Europeans freely

confess that in all problems involving organization and adaptation, we are expected to lead.

While there is practical unanimity throughout the civilized world as to the treatment of pulmonary tuberculosis, there is a radical difference between methods of treatment of the so-called surgical forms of tuberculosis in Europe and the United States.

In Europe, especially in France and Germany, quite as much attention is paid to closed and surgical tuberculosis as to the pulmonary form of the disease, while in this country this class of cases is practically neglected. The treatment in Europe is almost exclusively hygienic and dietetic. Operative procedures are only resorted to in exceptional cases. For example, in one institution of 1,100 beds exclusively for children under fifteen years of age, I was informed that not more than six cutting operations had been performed in the past three months. These institutions are usually located along the seashore. One illustration will suffice for all.

Berck Plage, located on the north shore of France, thirty-five miles from Calais; splendid beach, wide expanse of sand; village of 10,000 people which includes 4,000 cases of surgical tuberculosis. The city of Paris supports a very large institution at this place. Plan of buildings is good; while substantial, not necessarily expensive. Abscesses are aspirated and injected with iodoform. Glands are never operated on unless discharging, and then are merely cleaned out thoroughly and dressed antiseptically. Operations on long bones more frequent, but only then when there is extensive necrosis or abscess formation. Operations radical when indicated. Plaster casts in suitable cases.

There are several charitable institutions located here and hundreds of private patients flock to this village from all parts of Europe, who for the most part live in pensions. A novel feature of the treatment is the carriages constructed especially for patients in casts, which permits them to move about even when compelled to maintain constantly a prone position.

In Switzerland, Germany and Italy there are many institutions for the treatment of surgical tuberculosis particularly in children, and the results of treatment are very satisfactory. In France the virtue of the treatment is supposed to reside in the sea-air. In Switzerland, the mountain air, while in Germany and Italy it is simply air. It is well known that in this country about all we do for our surgical cases is to operate on them and place them in the wards or rooms of a general hospital. My personal opinion is that we operate too much in this country, and they operate too little in Europe, and that the best results would be obtained by supplementing the surgical skill and technique of the American surgeon with the hygienic-dietetic, tuberculin and vaccine treatment of the Europeans. They occupy one extreme and we the other. It seems reasonable to assume that the truth lies somewhere between the two extremes. At any rate their results are certainly far superior to ours.

The International Congress on Tuberculosis was held in Rome April 14 to 20, 1912. There was no striking discovery presented at the Congress

similar to that of Robert Koch when he announced the non-identity of human and bovine tuberculosis. There was very little of what can strictly be called original work, and none of it of epoch-making importance. The suggestion which attracted the most attention was the discovery of the relation of bovine and human tuberculosis. This was discussed very thoroughly in the conference which preceded the Congress proper, and the discussion was participated in by the master minds of the leading European nations. The discussion was characterized by eminent fairness and a disposition on the part of all to arrive at the truth. During the past three years and a half numerous investigators have been at work on this very important and very practical problem, and while the leaders are not yet in perfect accord they are much nearer together than they were at the last Congress — near enough at least to make it possible for them to agree unanimously to the following resolution:

Resolved, First, the prophylaxis against tuberculosis must principally be directed against the suppression of contamination from man to man, and principally in the family.

Second, the contamination of man by bovine infection is of less frequency, nevertheless it is necessary to continue all measures against infection of bovine origin.

By way of explanation it may be said that this is a compromise resolution and really represents the conservative view still held by the German school, who, while willing to admit the infection of man from bovine sources, do not regard it as a serious menace. The English and Scandinavian investigators regard it as a serious menace, with the French occupying a position somewhere between these two extremes. In the discussion there were certain local conditions brought out in the several countries which may account for the differences in the findings of the several investigators. For example, in Germany and France milk is usually cooked while in England and the United States it is usually taken raw. There also seems to be more bovine tuberculosis in some countries than others, and especially in the colder climates, and also more tuberculous cattle in different localities in the same country. It may be found later that these local conditions have an important bearing in certain localities, and if so, it will tend to fortify and strengthen the views expressed in the resolution.

The work of the British commission may fairly be regarded as the most reliable. Their work has been far more comprehensive and open minded. The British Commission have no preconceived views, but are simply seeking the truth, while the German schools are apparently followers of Koch, and seem to be seeking to establish his views rather than arrive at the truth.

The suggestions that attracted most attention from the standpoint of treatment was a revival of the method of treating unilateral pulmonary tuberculosis by the production of artificial pneumothorax, certain aspects of immunity and heliotherapy. It was significant that very little was said on the influence of climate *per se* in the treatment of tuberculosis.

except surgical forms, in which the French insist on the virtue of sea air, while the Swiss insist just as strongly on the specific influence of mountain air and sunlight. Inasmuch as they are all securing substantially the same results, it is fair to assume that the final conclusion will be, as in the treatment of pulmonary tuberculosis, that the virtue of their methods consists in fresh air and sunshine rather than any peculiar attribute, either of sea air or mountain air. Both nations are to be congratulated on their excellent work in this important and much neglected branch of the work. The United States seems to be behind all the leading European nations in making provision for the systematic treatment of surgical tuberculosis.

While but little that is new of definite value was developed by the Congress, it was interesting to note the decline of former views with regard to the influence of climate and the growing sentiment, not only in favor of sanatorium treatment, but the further fact that the results by other methods are unsatisfactory.

The hygienic and dietetic treatment of tuberculosis seems to be accepted in Europe as fundamental and that whatever changes are made will be with the present methods of treatment as the basis. The use of tuberculin as a diagnostic and therapeutic agent is no longer questioned by those in a position to speak authoritatively. Vaccines and serums are regarded with favor, but are still in the experimental stage.

A dominant note of the proceedings was that instead of looking for a specific remedy for tuberculosis, the protean character of the disease was recognized, and instead of directing our energies to the discovery of a single remedy or method, intensive study is being focused on the several methods which must be devised to meet varying conditions.

If nothing new of practical value was developed, the work of the Congress was none the less notable. Several new lines of attack were developed, and while practical results have not been obtained, the indications are that some of them will prove successful. Be this as it may, the most encouraging feature of the Congress is shown by the activity which must result in vastly improved methods of treatment, as has hitherto been done in other diseases, which seemed as formidable as tuberculosis now does.

In all the countries of Europe they have passed through that period of over-enthusiasm as to results of treatment through which we are now passing and which is so discouraging to practical workers in this country. The sanatorium has taken its proper place in the fight against tuberculosis and sanatorium physicians are not embarrassed by being expected to accomplish more than is possible and criticized because they do not meet the demands of an over-enthusiastic public.

In the matter of governmental control European nations, and especially Germany and Great Britain, are far in advance of the United States. In the matter of social organization we are in advance of them, and the outlook far more favorable for effective work in the future. This is perhaps due to the differences in political and social conditions. It is easier to enforce police regulations in European nations because their

form of government is more paternal. On the other hand it is easier to inaugurate and conduct social movements in the United States for the reason that we do not have to overcome the class distinctions which obtain in even the most liberal European nations. It is generally believed even by Europeans that more can be accomplished by education than by legislation, although each must supplement the other, hence our transatlantic brethren are looking to us to take the lead in this great warfare which, for the most part, must be conducted along educational lines.

NOTE.—That portion of this article referring to the International Congress on Tuberculosis is taken from the author's report for the *Journal A. M. A.*

THE VALUE OF FIELD WORK IN THE STUDY OF HEREDITY IN MENTAL DISEASES *

HENRY A. COTTON, M.D.

TRENTON, N. J.

Since the discovery by Gregor Mendel, the German monk, in 1866, of the laws now so well known, much valuable data have been collected and many experiments in plant and animal life conducted. But not until within the last few years has any attempt been made to study the hereditary features of insanity in the same systematic manner; in fact, it can be said that only within the last two years has any systematic work been accomplished in regard to mental diseases, although it has been known to all engaged in the study of insanity for years that heredity plays a very important rôle in the etiology of the various psychoses.

For years statements have been made regarding heredity in insanity and opinions given by those connected with insane hospitals, but when one reviews the data on which these statements are based one is struck with the fact that these data are woefully incomplete, inadequate and often inaccurately taken. Not only does this apply to the older histories, where no attempt had been made to find the facts, where the statements of the committing physicians were taken as a basis for statistics collected in the hospital, but even in hospitals where modern methods can be said to be employed, and where an attempt is made to obtain accurate histories of the patients admitted, the same criticism of the facts regarding heredity can be made. For even with the most conscientious work of the physicians on the histories taken in the hospital at the time of admission of the patient it is often impossible to obtain information relating to more than brothers and sisters, parents and sometimes grandparents of the patient. Often the husband or wife of the patient is the only one to whom we have access in the hospital for information, and frequently they know very little about the family histories of each other, and we have been contented to consider the statement of insanity in the family as sufficient data on which to base opinions as to the character and degree of heredity. It is not unusual even to-day to see reports in insane hospitals, i. e., insanity

* Read in a Symposium on Mental Diseases at Hotel La Salle, Chicago, April 19, 1912. Read by Miss Florence Orr, field worker, New Jersey State Hospital at Trenton.

in the family without regard to the character or type of the mental disease either in the patients or their ancestors. We must all plead guilty to this previous lack of interest in this matter.

It must be acknowledged that in this country at least the attention of the psychiatrist has been attracted by one outside the medical profession as well as outside the field of psychiatry. I feel that we owe Dr. Davenport a debt of gratitude for the tremendous interest he has aroused on this subject among the psychiatrists. It is needless for me to review his work here, but merely to state that two years ago he began to cooperate with institutions, first in the feeble-minded and epileptics, and soon aroused the sympathy and support of those interested in the insane, and two years after his event in this field finds quite a few hospitals for the insane making use of the field workers trained by him at Cold Spring Harbor engaged in collecting statistics regarding heredity. It is also gratifying to note that New Jersey has taken the lead in this line of work, and the pioneer work of Professor Johnson and Dr. Goddard at Vineland and of Dr. Weeks of the Epileptic Village at Skillman is now a matter of record. We can gratefully bow to their leadership in this field and humbly follow in the way that they have so successfully blazed.

The epileptic institution at Munson, Mass., under the direction of Dr. Flood, must also be mentioned here as among the first to employ field workers to study the question of heredity among the patients. Although Kings Park State Hospital, of New York, was the first to employ field workers in the study of heredity in insanity, we believe that the New Jersey State Hospital at Trenton was the first to organize a permanent department in this field. The number of field workers has increased each year until last summer found over twenty taking the special course and these were later sent to various hospitals and institutions among which were many insane hospitals. The great activity exhibited in this field of research speaks well for our future knowledge of the subject, and before many years, no doubt, we will have a much better conception of the question of heredity in insanity and kindred diseases.

In only one other country, as far as I am aware, can it be said that any original field work or systematic study of heredity has been established, and as one would expect we find this attempt in Germany. As far as I am aware the work is confined entirely to one individual at the present time. Dr. Rudin, Oberarzt of the Psychiatric Clinic at Munich, is the man I refer to. It is all the more surprising that such work has not been carried on in Germany much before this, as Mendel was a German, and usually such opportunity does not slip by the German. However, if it had not been for the English and American investigators Mendelian laws would mean little to us to-day, so in one branch of science at least the Germans must yield the palm in originality to England and America, especially as regards work accomplished in this field. As stated before, aside from Rudin's work the field may be said to be barren. In the application of the Mendelian laws to the heredity in mental diseases his work is so unusual and important that I feel it is worth our while to look at it more in detail. Since 1909 he has been Oberarzt of the Clinic at Munich.

During this period and for some time previous he has been collecting material for complex study of the question. So far one important contribution has come from the pen of Dr. Rudin, although in the amount of data collected I feel sure that he must have much more material than anyone else engaged in this work.¹

The work of Rudin is more remarkable and noteworthy from the fact that he has done the field work personally and at his own expense. He gives up his position at the clinic so many months each year and goes into the field to collect his data. He employs several clerks and stenographers in his office also at his own expense. I consider his work more systematic and accurate than that of any other investigator in this field. Aside from seeing the individual personally as far as possible, which is a tremendous advantage, he has classified lists of all the inmates of hospitals in Bavaria and can get very good records and histories of all cases from these hospitals when necessary. This access to accurate records is a great advantage, especially in the cases committed years ago.

From the majority of records of the hospitals in this country, even within a few years, it is almost impossible to make any sort of a diagnosis, or even guess from what form of mental disease the patient in question suffered. Without financial encouragement and against difficulties that would appear insurmountable to us, he has achieved wonderful results. His course on entartung given at Munich this fall was extremely instructive and interesting and very important to those who were working in the same field. I had the privilege of hearing his lectures and also had several interesting conferences with him in regard to the work. I had taken over some of our charts, but felt that they were very meager compared with some he was able to show me, and that our work so far was to be considered insignificant in view of the tremendous amount of material at his disposal.

The publication that I have spoken of is extremely important to us all, as it is practically an introduction to the subjects and points of the various problems to be investigated, indicating the line where one's energies can be expended with the possibility of obtaining the best results. In his work of 100 pages he gives none of his findings or produces none of his many charts, and this certainly teaches us an important lesson, and that is to proceed cautiously and have plenty of facts and a great many family pedigrees before coming to a definite conclusion regarding the subject. Not only has he collected valuable data in the field, but he has summarized the best literature on the subject and gives the best digest on the subject that has been published as far as I am aware. I would commend this work to all interested in the subject.

The literature in regard to the question of heredity in various mental diseases is as yet very meager. The work of Professor Johnston and Dr. Goddard of Vineland and Dr. Weeks of Skillman is familiar to you all.

1. His article, "Einige Wege und Ziele der Familienforschung mit Rücksicht auf die Psychiatrie," appears in Vol. vii, Part 5, of the *Zeitschrift für Gesamte Neurologie Psychiatrie*.

With the exception of the work of Dr. Rosanoff at Kings Park nothing has appeared in the literature regarding insanity.

We are just on the threshold of important developments in the study of this complex problem, and it behooves us to proceed with caution. Accuracy is the one thing we must attain in our work. The problems of the feeble-minded and epileptic are much simpler than are those of the other insane. In the former conditions we are dealing largely with a defective anlage idiocy and external factors play only a subordinate part in producing the abnormalities; on the other hand, in mental diseases the external causative factors play a very important rôle in the etiology of many forms, and these factors must be taken into consideration. So that it is absolutely necessary to consider forms of insanity either by themselves or only consider those which are closely related in the same group together. Each form will probably show peculiar features of heredity, and in some forms we may expect no more heredity than in normal individuals. As example we can cite defective childbirth or puerperal states in women, these conditions often precipitating not only delirious states, but often attacks of manic depressive insanity and even dementia præcox. Other sisters in the same family remaining single are not exposed to this precipitating factor, consequently they may not ever show any mental trouble. Many psychogenic factors present in one member of the family may be entirely absent in the sibs, and consequently latent predisposition to various mental affections may never be brought to light. So each individual type of insanity must be considered primarily alone.

The present rather unstable conditions of our classifications and the lack of definite pathology for many types whereby a clear differentiation can be made will necessarily cause us to proceed cautiously in our conclusions regarding hereditary features of many special groups. The large group of dementia præcox will probably offer more uniform types than will the manic depressive group. In the latter group, in view of recent anatomical findings, are many types which do not rightfully belong there. I might mention cardiac genetic psychoses, central neuritis, some forms of delirious stuporous states, which are often looked on as depression, and as we obtain more knowledge of the anatomico-pathologic changes in the cortex more cases will be taken from this group. So far it has been our inclination to make our cases fit into certain known laws, but if we have not the facts on which to explain the various hereditary conditions according to these known laws we should not assume too much; it would be better to admit our inability to correlate our cases according to the known laws than to force them into these laws without sufficient data. The tendencies to-day of families to have only two or three children at the most will often vitiate our results, or in families where a large part of the children die in infancy we are again being blocked from correlating the cases according to definite laws.

The conclusions reached by Dr. Rosanoff in the study of heredity in insanity in the light of the Mendelian theory are as follows:

The neuropathic constitution is transmitted from generation to generation in the manner of a trait which is, in the Mendelian sense, recessive

to the normal condition. Rules of theoretical expectation are accordingly as follows:

1. Both parents being neuropathic, all children will be neuropathic.
2. One parent being normal, but with the neuropathic taint from one grandparent and the other parent being neuropathic, half the children will be neuropathic and half will be normal, but capable of transmitting the neuropathic make-up to the progeny.
3. One parent being normal and of pure normal ancestry and the other parent being neuropathic, all the children will be normal, but capable of transmitting the neuropathic make-up to their progeny.
4. Both parents being normal, but each with the neuropathic taint from one grandparent, one-fourth of the children will be normal and not capable of transmitting the neuropathic make-up to their progeny, one-half will be normal, but capable of transmitting the neuropathic make-up, and the remaining one-fourth will be neuropathic.
5. Both parents being normal, one of pure normal ancestry and the other with the neuropathic taint from one grandparent, all the children will be normal, half of them will be capable and half not capable of transmitting the neuropathic make-up to their progeny.
6. Both parents being normal and of pure normal ancestry, all the children will be normal and not capable of transmitting the neuropathic make-up to their progeny.

THE WORK OF THE TRENTON STATE HOSPITAL

It will not be out of place here to describe the methods used at this hospital, where we combine "field work" for the study of heredity with "after care" work.

We have had for a year two trained field workers, supplied through the courtesy of Dr. Charles B. Davenport, to collect data in regard to heredity factors in the family history of patients. We have not limited them to any certain line, but have insisted that all possible information in regard to relatives should be obtained. In one instance one field worker obtained information in regard to 3,300 members of a family group. This family group was located in one of the northern counties of the state and had intermarried to such an extent that only five distinct families were represented. Of this number, seventy-six were insane, twenty-two were patients in the State Hospital at Trenton, fourteen in other hospitals and forty not committed. Following is a list of the various abnormal individuals:

Sexual offenders.....	50
Epileptics	5
Alcohol	46
Feeble-minded	13
Cancer	19
Sarcoma	1
Blind	2
Congenital defective.....	1

In practically every case investigated it is possible to obtain some information in not less than 200 members of a family, and sometimes a great many more. The field workers have found no difficulty in obtaining this information, and without exception, they have received courteous treatment from the individuals whom they have visited. We find that the families are much interested in the work and will give all the information possible. The field worker becomes acquainted with the patient and usually talks with the patient before going to the family, and in this way carries messages back and forth and establishes friendly relations. They spend on an average fifteen days a month in the field. The rest of the time is spent at the hospital, writing up histories and making out charts. They do not attempt to make diagnosis, but take down all facts given by the relatives. Wherever the family physicians know anything about the families, these are visited and their opinions also noted. Where relatives have been in the hospital reference is made to this, and a diagnosis made from the records when possible. When relatives have been in other hospitals, either in this state or in any other state, we have endeavored to obtain a copy of the records from these institutions.

The patients in the hospital are catalogued according to communities, towns, cities, etc. When the field worker goes to a certain district she has the names of the discharged patients who are living in that community. A visit is made to these discharged patients, and an endeavor made to learn something as to their condition. Often they find the environment such that it is necessary to report conditions to the hospital, and then advice can be given the family as to the right method to pursue to prevent a recurrence of the attack. This "after-care" work is a very important part of our field work and has resulted in much good to discharged patients. Several times during the year the field workers devote all their time to looking up discharged patients. Besides looking up the heredity in families, they inquire into the habits, domestic relations, occupation and any other factors which are wanted by the physicians. In certain cases where the statements of the family were questioned, the field worker went into the community and they were able to prove or disprove these statements. We have now collected a large number of pedigrees, averaging 200 or more to a family.

It is not my purpose to go into a close analysis of these charts, but these are given merely to show the progress of the work.

In Chart I (H. H.) we have the pedigree of a case of neurasthenia. Generations are given on the left-hand side of the chart. Each individual is numbered according to that generation. A transcript of the notes is given in this case to show the method of the work.

To summarize: We have a patient, a neurasthenic, one of three children, a sister of whom was an epileptic and a brother nervous. The father was a manic depressive case who committed suicide and the mother was neurotic. The father's family is apparently of good stock. The mother's family, however, shows marked defects. The maternal grandfather was a neurasthenic. The maternal grandmother was also

a neurasthenic. One maternal uncle epileptic and another alcoholic. A maternal aunt suffered from manic depressive insanity, but recovered. The epileptic uncle has one epileptic boy. One of the patient's great-great grandmothers on the mother's side was insane at the age of 30, following the death of a child, from which she did not recover. In the maternal grandparents' line there is a good deal of nervousness and neurasthenia.

IV-39 was a patient at this hospital, manic depressive insanity, recovered and married a former patient. His wife had another attack and recently the man committed suicide.

H. H., born in 1891, oldest child of J. G. H. and H. S. H. He has always been extremely nervous since early childhood, had never been like other children and has always been a source of constant worry to his mother. He has always read "deep" books and stayed indoors to read them. Many of these books were quack medical books. He is the oldest of three children. The next child, a girl, H., is nervous, and has suffered from convulsions after eating something which did not agree with her. It is perhaps epilepsy, as a brother of her mother suffers from epilepsy. The youngest child, a boy, is very nervous. There is a strong neuropathic tendency throughout the family, past as well as present generations. There is no insanity in the father's family, though there is a tendency toward sex perversion on the paternal grandmother's side. The patient's father himself committed suicide following two years drinking heavily after business reverses. The mother's family is all neuropathic, very few normal individuals to be found in the entire history. A great many of the people not committed were in a much more dangerous condition than the patient himself. The maternal grandparents and great grandparents were eccentric, a great-great grandmother was insane, a maternal aunt was insane and recovered, a maternal uncle was epileptic, a maternal great aunt and uncle insane, though never committed. A second cousin insane and in this institution, recovered. Many other neurotic.

Chart II (B. B.) is an illustration of the method of charting used by the Eugenics Record Office. There are forty-two individuals on this chart, whereas, Chart I has over seventy. This shows the inheritance through marriage of two feeble-minded individuals. Nine children were born to this family, all of whom are feeble-minded, one alcoholic. Two of these children are inmates of this hospital at present. One girl of this feeble-minded pair married a man who was alcoholic, but his family was normal. As the result of this union are three feeble-minded and two normal. One feeble-minded child is in Vineland. Another girl married a man who was alcoholic, and has one feeble-minded child at Vineland. Four members of this group are now cared for by state institutions. There are, altogether, twenty-two feeble-minded progeny from the original mating.

Chart III (J. K.) is a summary which represents 200 individuals, fifteen of whom are insane, ten were in the Trenton State Hospital, twelve tubercular, three neurotic, one feeble-minded, seventeen died in infancy, nineteen were alcoholic. Of the psychoses, we have six manic depressive, four dementia præcox, one questionable dementia præcox, one senile paranoid condition, one imbecile, one feeble-minded, one unclassified. The paternal line is fairly good, with the exception of alcoholism. The maternal line, on the other hand, is very much affected. The mother is neurotic. One sister was a border-line case. Two sisters were manic

depressive cases. The mother had nine living children, three died in infancy, making a family of twelve. The mother had manic depressive insanity from which she recovered and is now living at the age of 83. The father was alcoholic, had a sister who was in senile paranoid condition and a brother dementia præcox. This brother had two children, both of whom are dementia præcox and inmates of this hospital. He married a woman put down as peculiar. The maternal cousin is a case of dementia præcox in this hospital. As we see here, in the preceding generation the number of children exceed the large number of children of the present generation. In this family, out of five individuals who were insane in the grandparents and great grandparents, only two were in institutions, while all the cases that were insane in the parents' children were committed to institutions, and this fact will be found to run through all our charts. One can conclude that in the preceding generations the percentage of the cases who were insane and were committed to an institution were much smaller than the percentage of the same class to-day. This has an important bearing on the apparent increase in the number of insane institutions at present, for I think it can be definitely shown that a large proportion of those who were insane in the community in previous generations were kept at home.

Chart IV (M. L.) represents a family of 371 members, in which seventy-three were abnormal in the following proportions:

Insane	14
Alcoholic	6
Sexual offenders	11
Syphilis	2
Blind	2
Cancer	5
Epileptic	1
Deaf mutes	2
Congenitals	2
Constitutional defectives.....	2
Neurotics	10

Diagnoses of the insane are as follows:

Alcoholic insanity.....	1
Senile psychoses.....	3
Senile trauma.....	1
Constitutional defective.....	1
Arteriosclerotic brain disease.....	3
Manic depressive insanity.....	2
Psychasthenia	1

The patient represented by three asterisks was a psychasthenic. She has six brothers and sisters; two brothers twins and neurotic, two sisters neurotic, one sister insane, with diagnosis of hysteria. We find the mother was a constitutional defective. There are two brothers and a sister manic depressive, and the maternal grandparents were both senile psychoses. The father was neurotic, and was a psychopathic sexual individual. He was married three times. He had two sisters, one was senile, and the other arteriosclerotic. One brother suffered from senile psychosis, due to head trauma, at the age of 50. There were thirteen brothers and sisters in this family. Three could be classed with the senile psychoses, and here we find the father of this family died at the age of 60 of senile dementia, while the mother apparently came from normal stock.

This chart illustrates a very important point, that is, hereditary features of senile psychoses. Here the diagnosis is not made merely on old age, because of this family there are thirteen normal individuals living at the ages of 70, 93, 60 and 85, and this tendency to senility seems to be in this family in the proportion of three to twelve, thirteen children dying in infancy. Another significant fact, is the tendency in succeeding generations to develop manic depressive insanity and psychopathic states.

Chart V (P. H.) illustrates the inheritance in a case of dementia præcox. The patient was one of six children, three of whom died in infancy, one neurotic and one normal. The father was a case of manic depressive insanity, recovered, living at the age of 62. He is one of six children. A brother has arteriosclerotic brain disease, a sister neurotic. Paternal grandparents, the grandmother's line, is apparently normal. Paternal grandfather was a constitutional defective and died at the age of 66 of arteriosclerosis. Grandfather has twelve brothers and sisters. One brother is put down as melancholic, one died at the age of 42, had a sunstroke and was insane. One was a constitutional defective, died at the age of 19. There were five affected individuals in this group of thirteen, seven could be put down as normal, one neurotic. The mother of the patient was neurotic. She was one of fifteen children, seven of whom died in infancy, three were normal and one had hare-lip. The maternal grandmother was put down as insane. The maternal grandfather apparently a normal line. We have, then, summing up, a total of 292.

Insane	15
Epileptic	4
Feeble-minded	1
Neurotic	5
Hare-lip	1
Syphilis	2
Sexual offenders.....	2

Diagnoses of those insane are as follows:

Constitutional defective.....	2
Melancholy	1
Dementia præcox.....	1
Psychosis following sunstroke.....	1
Hysteria	1
Arteriosclerosis	2
Depressed	1
Feeble-minded	2
Unknown	2

CONCLUSIONS

We have not attempted to analyze these charts carefully, but they are given merely to illustrate the progress of the work, and also to illustrate what a difficult task the analysis of these charts means. Frequently, when a point in question is necessary, the field worker visits the family again to clear up these disputed points.

In this paper no attempt has been made to give any definite conclusions regarding hereditary factors in the various psychoses. We have reviewed some of the most important work done so far and outlined the methods to be pursued to obtain the best results in future work.

We have also spoken of some of the difficulties to be met with, especially when analyzing the material when it comes from the field workers. It is again well to emphasize the necessity of maintaining an open mind regarding these problems and not to be too biased in attempting to make the facts fit the Mendelian laws. At the same time we recognize that a comprehensive knowledge of the laws will assist us materially in analyzing our data and in arriving at practical conclusions. We also feel that much valuable material will be obtained which will aid us in solving the problems of prophylaxis and prevention of mental diseases. We hope that other hospitals and institutions will adopt this method of studying these important questions.

ADENOID VEGETATIONS OF THE NASOPHARYNX *

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Historical.—Wilhelm Meyer, of Copenhagen, in 1870, was the first to direct the attention of the medical profession to the part played by hypertrophied adenoid tissue in the development of nasopharyngeal stenosis, and furthermore, that deafness frequently resulted from the retardation of air through the Eustachian tubes, due to this condition. His conclusions were based on more than one hundred cases of his own personal investigations. These observations were at once recognized by Dr. Guye, of Amsterdam, and Dr. Lowenburg, of Paris. Numerous writers in both Europe and America have written extensively on this subject since Dr. Meyer first discussed postpharyngeal adenoids, but, comparatively speaking, little has been added to what has already been given us.

Since adenoid growths in the nasopharynx demand surgical interference in their treatment, it may be well to call attention, briefly, to the anatomic features and the relations to the parts concerned.

Anatomic Features.—Adenoid vegetations are found in the nasopharynx or the respiratory divisions of the pharynx, commonly called the postnasal space. This portion lies behind the nasal cavities and above the level of the soft palate. It is irregularly cubical in shape, and its six irregular sides and surfaces may be described as consisting of a roof, floor, an anterior and a posterior wall and two lateral walls. The roof is located immediately below the base of the skull, beneath the body of the sphenoid bone. The floor exists by virtue of the contraction of the muscles of the parts, in connection with the soft palate, by which the nasopharynx is separated from the oropharynx. The anterior wall is

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

limited by the posterior nares. The posterior wall slopes downward from the roof, presenting a curved surface rather than a well-defined angle. The two lateral walls stand in relation with the petrous portions of the temporal bones and the internal pterygoid plates of the sphenoid bone.

Adenoid tissue is one of the normal constituents of the nasopharyngeal mucous membrane. Immediately opposite the posterior nares, on a level with the inferior meatus and on each side of the pharynx are the orifices of the Eustachian tubes; between these openings there is a conspicuous aggregation of lymphoid tissue which constitutes the pharyngeal tonsil, or Luschka's tonsil. Throughout the mucous membrane of the postnasal space a considerable quantity of adenoid tissue is to be found, arranged as numerous lymph follicles. When this glandular tissue becomes hypertrophied, we speak of it as adenoid vegetations. Children are prone to this condition, and not infrequently they are found to exist in infants at birth. There is no doubt but that heredity plays an important rôle in some cases. In order to understand the pernicious effects of adenoid growths in children the disturbed physiologic functions should be considered.

Effects on the Respiration.—A comparison of the normal nasal respiration with the abnormal oral respiration due to adenoid vegetations, although familiar to all, will serve to illustrate the evil effects by contrast. In normal respiration performed through the nose, the soft palate and root of the tongue are in contact; thus separating the mouth from the pharynx. The current of inspired air ascends toward the roof of the nasal fossa, then changing its course descends in a curve in the direction of the superior and middle turbinals, describing almost a semi-circle in its course through the nose, reaching the upper portion of the posterior wall of the nasopharynx. The inferior turbinal lies wholly below the stream or current of in-coming air, except, perhaps, its posterior extremity. In expiration the air travels the same route, only in the reverse direction.

If there is an obstruction in the nasopharynx occasioned by adenoids and the respiration is embarrassed to any considerable extent, the mouth must be used for breathing. It is important in this connection to remember that the nose and not the mouth is the organ of respiration and constitutes the upper part of the respiratory tract. Habitual mouth breathing is a pathologic condition, the result of disease or disturbed function in some portion of the respiratory system. When respiration, of necessity, must be performed through the mouth because of adenoids in the vault of the nasopharynx the abnormal conditions become plainly evident. The root of the tongue is depressed; the soft palate is somewhat elevated; and in deep inspiration the tongue becomes flattened and lies close to the floor of the mouth, while the soft palate ascends to the level of the hard palate. Again the three important functions of respiration that should be performed by the nose, namely, the purification of the air, its moisture and the modification of the temperature of the inspired air are entirely prevented in oral respiration.

Developmental Changes due to Mouth-Breathing.—Children when quite young may acquire the habit of breathing through the mouth, because of vegetative growths in the nasopharynx, which leads to a lack of development of the mouth and jaws. The maxillary bones do not develop properly; this condition does not affect the first dentition so much, but along with the appearance of the permanent teeth they are crowded for room, due to the arrest of the development of the upper jaw. The teeth are irregular and do not attain their normal relations one to another, and if permitted to remain so, fail to furnish the proper stimulation necessary to the normal development of the bones in which they are located. Likewise the osseous structure of the deeper passage of the nose fails to develop, giving the child the appearance of flat-face.

Mouth-breathing in children produces not only deformity of the mouth and jaws, but when the obstruction is located in the postnasal space, it produces in well-marked cases a facial deformity that is characteristic: the lower jaw is dropped, the upper lip is often short, the eye-brows are frequently elevated, the inner canthi of the eyes are drawn down, the face appears elongated, the teeth are exposed, the nose is narrow and the expression is vacant, listless and stupid.

Other changes that are not so easily noticed in the facial appearance are at once discernible on the examination of the interior structures of the organs. There is a high arched palate; there is also lateral compression of the alveolar arch and elongation anteroposteriorly. If the disease persists until after the second dentition, the alveolar arch becomes higher and the top more pointed. The incisors of the upper deformed jaw project far beyond the corresponding teeth of the lower jaw.

Dr. Eustace Smith believes that in very young children symmetrical retraction of the inframammary regions and depression of the ensiform cartilages with prominence of the upper part of the sternum has been especially noted in nasal obstructions due to adenoids.

The facial aspect is at once recognizable. The mouth is half open, the alæ-nasi compressed, the buccal folds lost and the child usually has a stupid appearance. The child's rest is disturbed at night. It sleeps with its mouth open, it wakes up with a dry mouth and tongue, due to oral respiration. The nasal respiration is very defective, in some cases altogether absent; the nasal resonance is almost entirely lost and the child quickly gets out of breath on the least exertion. The child cannot eat properly, for it is compelled to breathe through its mouth at the same time it masticates its food.

Influence on Deglutition.—As has already been observed in normal respiration, the mouth and pharynx are separated by the soft palate coming in contact with the root of the tongue, so in the act of deglutition performed in a natural manner the nasopharynx is separated from the oropharynx. In the accomplishment of this function, the soft palate is likewise called on to perform an important part.

It is in the second period of deglutition that the nasopharynx, Eustachian tubes, and posterior nares must receive protection from food or drink finding entrance into their cavities. As soon as the liquids or

solids pass the isthmus of the fauces, the soft palate is raised and stretched horizontally across the pharynx, the superior face of the soft palate is in apposition or contact with the posterior wall of the pharynx. At the same time the palatopharyngeal muscles contract, in which the curved edges of the posterior pillars of the soft palate are made straight and tend to meet in the median line, the small gap being completely closed by the uvula. In this way the nasal pharynx is separated from the lower portions of the pharynx and the postnasal space and the posterior openings of the nasal fossa are thoroughly protected.

Now if the abnormal development of lymphoid tissue in the vault and posterior portion of the nasopharynx, and particularly on the site of the pharyngeal or Luschka's tonsil forms a considerable mass, it is evident that it must interfere with the harmonious action of the parts concerned in deglutition. The action of the soft palate is interfered with by being pushed downward, or rather hindered in its elevation in the performance of its normal function. These overgrowths act not only as an obstruction to respiration, but render deglutition abnormal to a greater or less extent by mechanically interfering with organs otherwise normal.

Aural Complications.—The ear symptoms induced by adenoid vegetations in the vault of the pharynx, are, in many instances, of grave importance. The pathologic conditions begin with the closure or obstruction of the Eustachian tube. If the hypertrophied lymphoid tissue is of sufficient size it presses on the tubes, or there is overlapping of their orifices, thus preventing the normal action of the tubal muscles; with the result of improper ventilation of the tympanic cavity. This is due directly to obstruction of the orifices of the Eustachian tubes. Inflammatory conditions may also arise in the nasopharynx and by continuity of tissue extend to the tympanum through the Eustachian tubes.

Disturbance of the aural function, due to vegetative growths in the postnasal space, arises from the disturbance which is occasioned by direct interference of the movements of the palate muscles. Three of the palate muscles form an attachment with the Eustachian tubes, levator palati, tensor palati and palato-pharyngeus (salpingo-pharyngeus).

If, as we have seen, the soft palate is prevented from performing its normal functions, in deglutition, or from a condition of habitual mouth-breathing, the effect must be shared by the Eustachian tubes. More particularly because of the disturbed action of the tensor palati muscle, which renders the soft palate tense and opens the Eustachian tube during deglutition.

Again if an adenoid mass is formed in the nasopharynx causing complete nasal stenosis, at each act of deglutition the air is exhausted from the tympanic cavity and the membrane is thus drawn in. The evil effects from adenoids on hearing is to be found chiefly in young children with hypertrophic rhinitis and enlarged faucial tonsils.

It is the opinion of the author of this paper that there is a strong bond of sympathy existing between Luschka's tonsil and the faucial tonsils. The structure of each is very similar, and no doubt they each

serve as protective zones against the invasion of harmful agents in the early years of life, but we find the tendency in both to atrophy at adolescence under normal conditions. At this period, the lingual tonsil seems to develop and no doubt performs to some extent the functions of both the pharyngeal and the oral tonsil, since it comes into contact with the inspired air and the food and drink as they pass over their surface.

So far we have been chiefly concerned with the manner in which adenoid vegetations disturb normal functions, rather than entering into the discussion of the histology and pathology of the disease. Since these are so well understood and the symptomatology and diagnosis present no difficulties, our greatest interest will be no doubt, in the treatment.

Treatment of Adenoids.—The only treatment for adenoids is operative procedure. Internal remedies appear to have no direct influence in their disappearance. Methods by chemical caustics and electric cautery are likewise unavailing. Local applications are not curative in their effects, and the only rational treatment that is of real service is in their removal by surgical interference.

Preparation of the Patient.—The same antiseptic precautions should be observed as in other surgical operations of the nose and throat. The mouth should be cleansed by an antiseptic lotion, the pharynx thoroughly irrigated and the nose sprayed or irrigated with an antiseptic douche.

The patient should then be placed on the operating table and the anesthetic administered. We have in choice of anesthetics, nitrous oxid, chloroform, ether and cocain. The author usually advises a general anesthetic and prefers chloroform.

After the patient is anesthetized, the head of the operating table is lowered and the patient placed in Roser's position, that is, the head dependent over the end of the table.

Instrumentation.—In regard to the instruments, quite a number are in use. Perhaps Gottstein's curette with its various modifications is the more universally used. Various kinds of forceps have also been used successfully in the removal of adenoid growths. The finger-nail operation is preferred by some surgeons. An artificial metallic nail is used by others.

In the hands of unpracticed operators, there are two dangers from the use of forceps that should be mentioned: first, the soft palate may be lacerated from a portion becoming engaged in the blades of the forceps; and second, the posterior end of the nasal septum may be seized by the forceps and the posterior end of the vomer torn. In the use of the curette, precautionary measures should be adopted to prevent the patient from inspiring adenoid tissue and blood during the operation. Aside from this danger, which might set up septic inflammation in the bronchi, septic pneumonia or gangrene of the lungs, accidents from hemorrhage and from sepsis in the field of operation are to be carefully guarded against.

In the finger-nail operation, or the use of gauze to break down the redundant growths, the danger lies in not being able to free the nasopharynx from the entire mass.

It has been the author's practice for several years to use a finger curette of his own design, that has proven serviceable. The curette is placed on the index finger, with its cutting blades above, and when it is introduced into the postnasal space, the blades of the instrument come into direct contact with the adenoid tissue to be removed. There is freedom in its use from the dangers of injuring the soft palate and the posterior end of the nasal septum, which may occur in the use of forceps or curettes with long handles. Having ascertained the condition of the nasopharynx by a digital examination previous to the operation, the operator with the finger and the finger-curette in place, when introduced



Author's finger-curet.

into the postnasal space, has some advantage in feeling his way as he removes the growths and is thus enabled to some extent by tactile sensation to make the proper amount of pressure when and where it is needed in excising them.

Operative Procedure.—With the patient anesthetized and in the recumbent position as above described, the mouth is opened and a Denhart gag is inserted. The finger-curette is placed in position on the index finger, which is introduced into the postnasal space. A few

sweeping lateral strokes across the posterior wall of the nasopharynx, and also from above downward, thoroughly removes the entire adenoid mass. In case any shreds or remnants remain they may be removed by forceps or with a piece of sterile gauze.

After-Treatment; Latent Infection.—Ordinarily, local applications are unnecessary, but should they be required a spray of an alkaline antiseptic solution may be used.

Sepsis following an operation for the removal of adenoids is of rare occurrence; if care is taken with the sterilization of the instruments, the operation field and the hands of the operator, the drainage is almost perfect, yet slight infection follows in some cases. The most serious are cases in which infection invades the Eustachian tubes. Tonsillitis occurring a few days after an operation on adenoids may be looked on as probably due to sepsis. If the end of the bony septum has been broken, sepsis may follow, but in all such cases the infection is usually mild and subsides in a few days without serious consequences.

Danger of Infection from Without.—It is well for the patient to remain in bed from twenty-four to forty-eight hours after an operation for adenoids. There is always some danger of infection from vitiated air or contaminated atmospheres. School children should not be allowed to return to school for a few days following the operation. At the end of a fortnight the nasopharyngeal space should be carefully reexamined in order to ascertain the condition and to determine whether or not the normal nasal respiration has been established.

DISCUSSION

Dr. W. L. Ballenger: Dr. Smith has given us a very admirable review of the facts connected with adenoids, for which he need not have apologized, I am sure.

I have never tried Dr. Smith's treatment; it does not appear to me with this thimble it would be possible to make a complete removal, although I cannot say. It seems to require a sharper instrument. I have had no experience with that hence cannot express an opinion, but will say that it does not appeal to me as a radical operation.

To get results in adenoid surgery, I think it is essential that we remove all of the adenoid tissue, otherwise we will have recurrences in 20 per cent. of the cases, whereas when making a radical removal of the tissue we will not have any recurrences. I have followed various techniques as the years go by, but have abandoned forceps because I had a death following their use a few years ago, and I have never attempted to use forceps since that time. This death was entirely preventable. The doctor had gone to a neighboring city and I left thirty minutes after, and the child was supposed to be asleep, and we found out some hours later that the child was swallowing blood and had been doing so for some hours and it was too late to save the patient. It was a concealed hemorrhage. Had we known she was bleeding we could have tamponed the nose. Anyway it made me realize the dangers of the forceps operation.

The method I pursue in general anesthesia is to first use the LaForce adenotome. But that does not remove all of the tissue; I do not believe you can do a complete operation with the LaForce instrument alone. The LaForce instrument removes the central portion of the adenoid tissue, but does not remove that portion just behind the nasal septum. It leaves a little strip laterally, but removes most of the adenoids except that. If you use a considerable amount of pressure it gets out most of the adenoid tissue, a very nice specimen to show the family and demonstrate what has been done. After using the LaForce instrument I

then follow with Dr. Stillman's modified curet, and remove this little mass lying laterally behind this septum, then I insert my finger with a piece of gauze over it, and in that way I think you can always safely say you have done a complete operation. I used to see many more recurrences than I have in recent years since following this method.

Now as to the age in which adenoids present; this is a point not touched upon by the writer, excepting to state that children are prone to it. Some investigations have been made on this point which showed there was an appreciable tendency for adenoids and tonsils to grow less at the age of puberty, but continue to adult life without shrinking, and that accounts for the improved nasal breathing which comes after adolescence, due to the fact that the pharynx becomes larger and larger and the adenoid tissue becomes less and less obstructive, formerly thought due to shrinkage, but later thought due to the enlargement of the space in which the adenoids grow. A great trouble that arises from adenoids is not so much from obstruction as from the inflammation that arises, and I think most of the ear troubles that we find are the result of adenoids surrounded by an inflammatory region rather than obstruction, although there is a simple mechanical obstruction as Dr. Smith told us; and I simply want to emphasize that I think this mouth breathing in itself is not so bad, but it leads to other conditions of an inflammatory type; the infectious process starts in the tonsils and spreads to the ears and nose and the other parts of the body. There is where we get our very serious complications. In this connection I wish to relate that in the last two months I have had ten mastoids following acute tonsillitis and no doubt adenitis as well, and each one was an intracranial complication without exception. I had a sinus thrombosis, a circumscribed meningeal abscess, a diffuse retromeningitis, and it is the most destructive series of cases I have ever met with in all my life.

Dr. Richard J. Tivnen, Chicago: Dr. Smith made an apology for presenting this sort of a paper to a special section. I am sure he need not have made such apology. The paper was well done and very practical, and I am sure we all enjoyed it.

The point Dr. Ballenger brought out, in which he reported a case of death from concealed post-operative hemorrhage, emphasizes the point I wish to make, namely: I think all of these cases, so far as it is possible, should be hospital cases, and I believe they ought to have a special nurse to care for them, who has had training in that particular line of work.

Dr. Ballenger: The case did not have a special nurse, but was in a hospital where the nurses are sisters.

Dr. Tivnen (resuming): We all know the average general hospital as a rule does not provide more than a scant course of training in our special work to their nurses. Those of you who have had much to do with general hospitals know that to be true.

In this connection it seems to me it would be well if the staff men connected with these hospitals should insist that they be permitted to deliver to the nurses an adequate course of lectures dealing with the nursing of our particular class of cases. From the standpoint of our patients' welfare I think we are entirely too modest in this respect. I had this same idea in mind when I spoke of the fact in discussing Dr. Beck's paper—that we are entirely too willing to merge our work with the general surgeon. Naturally the surgeons and to a large extent the hospitals also are more particularly interested in laparotomies, more particularly interested in major surgery, so to speak, and our field receives very little attention. It would be well if every staff man insist that the hospital should direct more attention to our special work and that the nurses be given special instruction regarding the after-care of our operative cases.

I have devised a little instrument, a simple forceps with the ends at right angles; the sponge fitting into the tip. It is inserted into the nasopharynx after adenoid operations. It diminishes the tendency to postoperative hemorrhage and lessens the amount of blood lost at the time of the operation.

As to the instrument the doctor uses for curetting, I follow the same technic identically that Dr. Ballenger has described, and I am very partial to the LaForee instrument. I think it is just the thing and it is not so apt to injure the Eustachian eminence. I think this is one of the dangers we should be on our guard against. It is possible, if you go too much laterally, as you may in the movement of a child, etc., more particularly with the curet, you may injure the eminence.

I believe we should all wear rubber gloves particularly if we are curetting the nasopharynx. I do not remember any case where a surgeon has been infected, but it is along the line of clean surgery to wear rubber gloves, particularly if curetting the nasopharynx with the finger, or with gauze as Dr. Smith has described or with his little instrument.

Under the head of anesthetics I rather differ with Dr. Smith. I never use chloroform. I am afraid of it. I prefer ether as a general anesthetic or perhaps nitrous oxid.

As a means of diagnosis of adenoids once in a while I find Hayes' pharyngoscope very useful.

I believe we should exercise the utmost caution in selecting adenoid cases and the time for the operation, exercising also a great deal of care as to the condition of the tonsils themselves and the surrounding tissues, and preparation of the nose some days prior to the operation. The time has passed when we can consider or let the people consider that an adenoid operation is a simple matter. We hear altogether too much of the so-called trivial side and this popular impression we should earnestly combat.

Dr. H. W. Woodruff, Joliet, Illinois: I would like to call your attention to two cases of hemorrhage following adenoid operation which occurred in my experience. One was a young lady, 21 years of age, on whom I operated in my office for adenoids, and following the operation there was an immense amount of hemorrhage, but I succeeded in checking it. She lived in the country, so I took precautions to have her remain over night in the hospital, and there was no further hemorrhage at all and she went home. She lived twelve miles in the country, and about two days after the operation the family doctor was called to see her on account of a late hemorrhage, and he became sufficiently alarmed to telephone me, saying he was sending the patient to me but when she arrived there was no bleeding; however, I put her in the hospital again. There appeared to be no hemorrhage whatever, but during the night another hemorrhage occurred and it was necessary for me to spend a good part of the night with the case. In fact it was very alarming for a time, but that was the last of the hemorrhage. It might of course have been a fatal result if that patient had not returned to the hospital.

The other case was that of a child. The operation was performed in the house. The family physician was present. The child had been sick and the operation was delayed for a time until the doctor thought everything was all right, and so we went ahead with it. This operation was attended with no unusual hemorrhage, apparently, and the little child was put to bed. The next day I was asked to come up to see the child as it had vomited considerable blood. I examined her throat and did not see any blood. I suppose we have all had this experience, not knowing how much hemorrhage might be occurring after the adenoid operation, when in reality there might be a good deal of blood swallowed by the child when it was asleep. The cause of the hemorrhage was the liver. The child was jaundiced. So I have since been very careful to note whether the child is in perfect health before attempting this operation.

Dr. Louis Ostrom, Rock Island: After the child is brought from the operating table I never leave it until I know the bleeding has stopped, and I explain as to the number of times they swallow. I have had an experience along that line. The child is sleeping and goes along two or three minutes or more without swallowing at all. If the child begins to swallow six or eight or ten times a minute, there is something going to happen. Invariably it means a postoperative

hemorrhage. By telling the mother particularly to watch the patient as to the frequency of swallowing, and if the patient swallows six or eight or ten times a minute I know it is not saliva.

In regard to the anesthetic, I want to say that I have had three deaths under chloroform. It was not my choice of anesthetic, but the choice of the family physician who insisted on the use of chloroform and the patients died, and I think it is one of the most dangerous things we can use.

The question of swallowing immediately after an operation is to my mind one of the most important indications. I always leave instructions to watch the child and if the mother is not the kind to notice things I insist that there be a nurse or some person who will do this. I insist on observing the question of swallowing for the first twenty-four hours. If they swallow frequently, invariably you have hemorrhage.

Regarding the use of the LaForce instrument—Dr. Ballenger described it well and I could not have done better myself—I remove the adenoids with this instrument. I keep the instrument in probably a few minutes, pressing it against the space that was just operated on. By doing that I have been able to minimize the amount of hemorrhage by pressure with the LaForce instrument at the time.

Another word in regard to swallowing. It is not a question of noticing it; any one can notice it, but if they swallow more than six times a minute, and if bleeding at all they will give a little gurgle and swallow; then they are having a hemorrhage. I had probably twelve or thirteen cases like that in the past year and the question of hematemesis has made me look into the question personally. I hope Dr. Beek will show his instrument that has proven to be one of the most useful ones, for I can leave it with the nurse, and no nurse has ever had any trouble in putting that instrument in. It is the easiest instrument to use I have ever seen.

Dr. C. A. E. Lesage, Dixon: I protest against the use of chloroform in this operation, not only for the immediate dangers present, but for the remote dangers. It has been shown by some Eastern investigator—I think the work was done in the Johns Hopkins Hospital—that the use of chloroform is dangerous, causing fatty degeneration of the liver and changes affecting the kidneys.

As physicians and men practicing in the country, we have occasion to see in what almost disregard the adenoid operation is held by the average practicing physician. It is considered an operation of practically no moment. Every doctor practically does it and does it fearlessly. Yet notwithstanding it should only be a hospital operation and treated as such.

Dr. C. B. Welton, Peoria: In regard to the anesthetic in adenoid cases, I never use chloroform. In our town in three months we have had three deaths from the anesthetic; two of the deaths occurred in the practice of a general surgeon. In one of those two cases gas anesthesia was used, and in the other ether anesthesia was used. The other was in the practice of an ear, nose and throat man of our city and was under ether anesthesia. In these cases, in spite of the deaths with the gas anesthesia, I firmly believe gas is the anesthetic for these short operations. In the death that occurred in the general surgeon's practice it was not a short operation, it was a laparotomy, and so was the death that occurred with the ether. But in spite of that death, if gas anesthesia is used for short operation, I believe it to be by far the best. The case has not been reported that was due to the operation by the ear, nose and throat man.

Dr. Joseph Beek, Chicago: There were several points I wish to discuss. First is the subject of anesthesia. I believe this is all out of place or unnecessary as to the subject of chloroform. Two or three years ago at the American Medical Association there was a commission appointed—most of you are familiar with the report—and the use of chloroform was very much objected to and therefore should not be used; ether was advised as the safest method of anesthesia. Recently I brought an apparatus from New Orleans where I saw it demonstrated at that time in tonsil and adenoid operation, which is excellent for administering an anesthetic. It is the warm vapor of ether forced by means of a foot bellows.

A subject the doctor did not touch upon although so well known and to me most important, is the point of the pathology in regard to tonsils and adenoids. The whole subject whether there is bleeding, infection and recurrence, etc. depends a great deal on the pathologic condition. Unfortunately you are unable to remove a piece before operation and see what you have. I have removed adenoids and examined histologically and I have found in them eleven different types of pathologic conditions, including malignancy and tuberculosis.

In regard to this instrument, that the essayist shows us, it appears to me it would be practically impossible to engage a big mass in that little space and scrape and scrape, when you might do it with one single sweep of the curet. The Beekman curet or the one modified is the instrument I have used, and it is the best means of removing the adenoids. I have used the LaForce instrument twice. The first time four and a half years ago and I had a severe hemorrhage following it which required post-nasal packing. Four and a half years later I again used it two or three times with success, then I had two children of the same family at one time and both of these children required post-nasal packing. Why this should occur I am not able to say. I have some idea it is the pressure of the instrument against the septum in trying to get that last piece, that caused the hemorrhage. Therefore, my conclusion as to instruments is in preference of the adenoid curet. I am using the sponge on the artery forceps held there after the operation to control the bleeding. If I used the LaForce instrument I think it would be excellent to hold it there and to control pressure as suggested by Dr. Ostrum. I am at the present developing a method of controlling immediately the bleeding from the removal of the adenoid and will publish it in the near future. The less blood there is lost the more perfect and rapid is the recovery.

Dr. Frank W. Brodriek, Sterling, Illinois: I would simply touch on the question of anesthesia, that is, chloroform anesthesia. I was so much surprised to hear that mentioned in an eye, ear, nose and throat section. Children and infants as we all know have been shown to stand chloroform anesthesia worst of all. In reference to ether, chloroform and nitrous oxid anesthesia, I was particularly interested to hear Dr. Welton regarding nitrous oxid anesthesia. I have had six hundred cases of nitrous oxid and gas anesthesia, and they have ranged from an anesthesia for two or three minutes to two hours. I have had all kinds of cases of the head, brain abscesses, mastoid cases, and in none of these cases have we had any difficulty in maintaining anesthesia as long as necessary. In none have we found any ill effects following nitrous oxid and oxygen. I have a man who makes a specialty of gas anesthesia. We use the nasal inhaler entirely, very similar to that followed by Dr. Teter of Cleveland. It is placed over the nose of the child; there is no fright, and no cries. It is asleep before it realizes it. There is no difficulty in maintaining the anesthesia for any length of time. Often in those cases where the fold of the pharynx is occluded by adenoid tissue it is very easy to maintain anesthesia under pressure. Rebreathing is not to be advised in cases of adenoids in children. We find continuous anesthesia through the nose with nitrous oxid and oxygen to be very satisfactory.

The doctor spoke of the use of pressure with the adenotome. I can hardly understand how he gets relief from the hemorrhage in case he had any further operative work in the field.

In regard to hemorrhage, I have been following one little point and have found it very satisfactory. Maintaining our anesthesia after tonsil and adenoid operations, following the operation we use just an ordinary syringe with cold water, syringing the mouth. I might say in regard to the position of the patient that my anesthetist sits at the head of the operating table; the patient is drawn forward, the head placed on the knee and turned to the left side, and the left tonsil is removed first. In that way you have no difficulty in controlling hemorrhage. Following the operation we inject cold water and it is surprising how a few syringefuls of cold water will stop hemorrhage.

Another point I wish to speak of which I think was mentioned by one of the gentlemen, and that is the examination of adenoids. I myself do not believe in digital examination alone. I have had just recently one case of tuberculosis in

the folds of the pharynx, in the adenoid tissue, and two cases of tuberculous ulcers of the tonsils. These two cases are under my care at the present time. As to the question of diagnosis, I had both examined by a laboratory in Chicago, and I think it is very wrong to trust entirely to a digital examination of the folds of the pharynx. It is very easy to gain the child's confidence and examine it thoroughly.

Another thing I have followed in all of my cases and that is the making of a smear from either the tonsils or adenoids. Prior to every tonsil or adenoid operation a smear is made. If there is any question as to the diagnosis a culture is made.

Dr. W. L. Ballenger, Chicago: I want to say a word regarding the so-called recurrence of adenoid tissue. I think nowadays, when there is no nasal stenosis, particularly in young children who have attacks of earache, that we frequently operate before the various portions of the adenoid tissues have become hypertrophied. A year or so later those areas which have not been removed—and I do not believe it is correct to scrape out the pharyngeal mucosa—those cases will go along to the same condition which produced adenoids and become hypertrophied. Those cases we do not see very often. They blame the original operator and consult some one else. I had that experience in my own child. I operated on her when she was sixteen months of age and found very few adenoids in the fold; I operated because of two or three attacks of earache.

Another point Dr. Tivnen brought out that may be of interest to the section: At St. Luke's Hospital we have been experimenting for years training nurses for our special work. They are originally general hospital nurses. Finally we get for our department a nurse who devotes her whole time to our special cases for three months; that was an improvement over the original condition, but still it was not satisfactory. For the past two years we have had a graduate nurse, and she is paid a salary and devotes her attention entirely to our section and we find it a great source of satisfaction. She accepts all the responsibility. In addition we have two interns on the service. We cooperate with these three people and feel very safe about leaving our postoperative cases in their hands.

Dr. G. W. Boot, Evanston: It is well not to treat the field of operation before doing an adenoid operation. If the field is not infected it does not need preliminary treatment. If it is infected no amount of treatment just prior to operation can render it free from infection but by meddlesome treatment infection can be carried into the tuba auditiva and a middle ear suppuration result.

Adenoids cause middle ear troubles not only by a mechanical action in the nasopharynx but also by a mechanical action in the tuba auditiva. It is well known that there is a considerable amount of lymphoid tissue in the mucous lining of the tuba. Any process which causes enlargement and infection of the pharyngeal tonsil will naturally cause enlargement and infection of this lymphoid tissue in the tuba.

As regards anesthesia, I believe that many of us give too much anesthetic to our tonsil and adenoid cases. I prefer to have my patients barely under the anesthetic, so lightly in fact, that they are waking up as soon as the operation is finished. I prefer ether on account of its safety and rarely use as much as quarter pound can for a tonsil and adenoid operation in a child, and I have several times operated on four successive tonsil and adenoid cases with but a half pound of ether.

Dr. G. Henry Mundt, Chicago: One of the first things that interested me in Dr. Smith's paper was what he said of the history of adenoids. He said Meyer was the first man to recognize adenoids. As a matter of fact Charles Dickens observed adenoids long before Meyer did. I remember very distinctly reading that Dickens said where children are employed in certain classes of work in closed rooms, breathing with their mouths open, that it gives them an enlargement of the palate, but he does not give the pathology.

Another thing was the developmental defects. Dr. Smith spoke of the developmental defects of oral breathing. Two or three months ago I showed several cases in our local branch society meeting of the developmental defects of restricted

nasal breathing, and the reason I took these patients there was to demonstrate the narrow nose. I think the narrow nose is decidedly an important thing. When the palate becomes high arched the external walls of the nose are drawn in, and I do not know of any way you can correct this other than have an orthodontist do it. Often I have had adenoid cases on which I operated and did not get a good result, not good nasal breathing. I have put the patient in the hands of an orthodontist and he has corrected the defect of the teeth and they get good nasal breathing. I think that possibly very frequently we should put our patients in the hands of a man to look after their teeth, because if there is not normal occlusion it is impossible to close the mouth and if they cannot close the mouth normally they cannot have free nasal respiration.

In regard to the point of placing the patient on the left side and not operating on the back, I think the left side is an admirably good position to operate on a patient. I generally place a sand bag under the neck, and I have the patient maintained in that position for some hours after the operation when put to bed.

Another thing of importance. I have observed in my part of Chicago within a period of a few months two deaths in doctors' offices who were doing tonsil and adenoid operations. I think the idea of doing a tonsil or adenoid operation in the office, particularly under a general anesthetic, is to be deprecated; taking the patient practically off the street and giving him a general anesthetic is bad. I think patients should be observed previous to operation for some hours. In my tonsil and adenoid work I try to get the patient in the hospital in the evening and operate in the morning. They take the anesthetic better and get along better.

Dr. Smith (closing the discussion): Mr. Chairman: I want to thank the gentlemen for discussing this paper so liberally, and particularly Dr. Ballenger, who has been kind enough to introduce the discussion because of Dr. Adams' absence.

I want to take a moment's time to say just a word about chloroform anesthesia. It would seem that I have been very fortunate in this. If you have a child to operate on, 6, 8, 10 or 12 years old, unless there is a contraindication it seems to me to be quite the thing to start with chloroform and then follow with ether, Squibb's ether. That is my invariable practice. I like to put the child down and get rid of the first fright with chloroform and then follow with ether. That has been the principal way in which we have given anesthetics.

Now about the preparation. If I had a little more time I would like to speak fully on this subject. It has been mentioned that these cases should be regarded as hospital cases and I think so too. I think a tonsillectomy, or the removal of adenoids, or a turbinectomy ought to be dignified sufficiently as a surgical procedure to send the patient to the hospital the evening before, and let the patient be thoroughly prepared for a general anesthetic in the morning if we use that method. A urinalysis should be made, there should be an examination of the heart, an examination of the condition of the lungs, etc., a laxative should be given the evening before and everything of that character taken into account. I think that is one of the things that ought to be emphasized.

I am very glad the doctor has spoken about hemorrhage in watching the swallowing. When a child is removed from the table, a nurse that has had some experience with these cases is entrusted with the care of the child, and she is told to watch for hemorrhage when the child swallows frequently and watch the condition of the ears and lips and all those things. They are little things in a way, but well worthy of care.

In cleaning out the post-nasal space thoroughly, as I said in my paper, if there are shreds and tags remaining the forceps should be used.

One doctor spoke of operating on a child sixteen months old. I have had no experience in operating on children of that age.

Pathology was also mentioned. I would say that our text-books usually give us something of the existing pathology, and still the pathology will differ, and these are matters for individual examination.

I wish to thank the members for their kind discussion, and also wish to thank the chairman.

THE RATIONALE OF SINUS DISEASE AND ITS TREATMENT *

WILLIAM LINCOLN BALLENGER, M.D.

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I have chosen this subject because I believe it is fundamental with reference to sinus disease.

First a word about inflammation. Inflammation as described by modern pathologists, more particularly Adami of Montreal, is a three-fold process, namely, increased hyperemia, increased leukocytosis and increased nutrition. That's all. The end-result of inadequate inflammation is a very different thing. The inflammation itself is simply an increased hyperemia, increased leukocytosis and increased nutrition of the tissues. The purpose of inflammation is to overcome infection of the tissue.

If infection is present, it is the object of the inflammation to increase the nutrition of the parts—increase the nutrition of the cells of the inflamed area—and to destroy the pathogenic microorganisms. Then also where we have excessive growth of infective microorganism or trauma, we have an increase in the number of leukocytes throughout the locality. Inflammation (the response to infection) is a very simple process. We are in the habit of thinking of inflammation as an end-result rather than as a physiologic process excited by stress. Inflammation itself is a simple process, a physiologic process, and not a disease process; on the contrary, it is benign. When the reactions of inflammation are inadequate the effect is destructive.

We now come to the causes of infection. We divide the causes into predisposing and active. The active cause is some pathogenic microorganism which does not cause inflammation under ordinary conditions of health. What are the predisposing causes of infection and inflammation? Anything that lowers the vitality of the tissues. What are the things that lower the vitality of the tissues? First, we know exposure to cold, improper clothing, improper shoes, improper housing, diet, etc., temporarily lower the vitality. Then, on the other hand, there are certain anatomic causes of infection. Anything, as I said before, which lowers the vitality of the tissues will predispose to infection and inflammation. I have here some drawings which illustrate the various anatomic obstructive lesions of the nose. We find in Ziegler's pathology the statement that anything that obstructs drainage and ventilation of a cavity lined with mucous membrane, will lower the vitality of that mucous membrane and predispose it to infection and inflammation. That leads us to the study of what the anatomic conditions of the nose are which obstruct drainage and ventilation: and wherever we find such obstruction we have a condition which predisposes to infection and to reaction and the reconstructive processes of inflammation.

First, here is a deviation of the septum (indicating drawing). Here is the middle turbinate, here the infundibulum, which is a gutter on the

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

outer wall of the nose. Into this drains the antrum of Highmore, and in about 50 per cent. of cases the frontal sinus also drains into it, and in the other 50 per cent. drainage is directly into the middle meatus of the nose. Most of the anterior ethmoidal cells also drain into the infundibulum. You will observe that the high deviation of the septum crowds against the middle turbinate, which in turn encroaches on the hiatus semilunaris and obstructs the infundibulum and the sinuses draining through it. Chronic obstruction means chronic predisposition to infection; hence, chronic infection and inflammation of these sinuses. If the infection were transitory, as from exposure, and there was no obstructive lesion in the nose, the infection and inflammation would be transitory or acute.

The second condition in the nose which may produce obstruction to the drainage and ventilation of the anterior group of cells, is hyperplasia of the middle turbinated body. (Shows drawing.) The great thickening of the mucous membrane crowds on the hiatus semilunaris and obstructs the drainage of the frontal, ethmoidal and maxillary sinuses, and predisposes to chronic infection and inflammation of the anterior group of sinuses.

The fourth drawing shows a large cell in the middle turbinated body. The middle turbinal is very thick and obstructs the drainage and ventilation of the infundibulum and all the sinuses draining through it, hence, predisposes to infection and inflammation.

The fifth drawing shows an enlarged bulla ethmoidalis, which obstructs the infundibulum, as it overhangs the hiatus semilunaris, and being thus enlarged impinges on and closes off the infundibulum and prevents drainage and ventilation of the anterior group of sinuses.

These and other lesions which are in close anatomic relation, I have named "The Vicious Circle of the Nose." The obstructive lesions have all been described in the several lesions, and, for the sake of brevity I refer to them as the "vicious circle of the nose." I have referred to six or seven anatomic lesions in the nose which may produce obstruction to drainage and ventilation. If the obstruction to drainage and ventilation is one or more of these fixed anatomic conditions we have a permanent predisposing cause to infection. If the feet are exposed to inclement weather, or the general system, by living in a poorly ventilated house, a temporary or intermittent lowering of vitality occurs and an acute sinusitis may result. The patients who have permanent pathologic and anatomic obstructions to drainage and ventilation have a permanent impairment of the vitality of the mucous membrane within these sinuses. Hence such a patient is most apt to have a chronic ethmoiditis or a chronic sinusitis of the frontal and maxillary sinuses.

If there is permanent obstruction to drainage and ventilation you should expect chronic sinusitis; or if a temporary condition, as wet feet, lowers the vitality you might expect a temporary inflammation, i. e., acute sinusitis.

If the sinus disease is caused by simple exposure or indiscretion then you must expect to have only transitory disease to deal with. You would

ordinarily treat a case of acute sinusitis by applying a solution of cocain and adrenalin to the middle turbinal region. These together with heat and other simple measures and cathartics, will usually cure a case of acute sinusitis.

I differentiate between acute primary sinusitis and an acute exacerbation of a chronic sinusitis. If you have a permanent obstructive lesion of the nose that interferes with drainage of the sinuses you should remove the obstructive lesion. It may be a deviated septum, various diseases of the middle turbinated body, luxation of the middle turbinated body, or it may be an enormous bulla ethmoidalis—or two or more of these may be present.

If the chronic disease is of a comparatively recent origin, and the change in the mucous membrane of the sinus has not been very great, then it might be simply treated and controlled: that is, removing the middle turbinated body away from the lateral wall of the nose may be sufficient to establish drainage and cure the disease. If the obstructive lesion is an enlarged bulla turbinalis, then the removal of the middle turbinated body might be sufficient to cure the disease. If it is a very large bulla ethmoidalis the bulla should be removed. That may be sufficient to establish drainage and ventilation and result in a cure. If the disease is very old and chronic, and pus has been discharging for months or years, and the mucous membrane within the cells has undergone great pathologic changes, these measures will not result in a cure in all cases. Indeed, they will nearly always fail. When great pathologic change has taken place it becomes necessary to remove the ethmoidal cells, or if the antrum and frontal sinuses are involved the antrum must be exposed by some radical measure, and the frontal sinus operated on by the Killian method, or some modification of it.

So you see the pathology enters very largely into consideration. The removal of the etiologic anatomic lesions is only effective in early stages and simpler forms of chronic inflammation, but in very old chronic cases, in which great changes have taken place, the etiology is only of secondary importance, because you must then do a radical operation on the sinus involved.

I want to make a few practical remarks about operations on the sinuses. First, about the antrum of Highmore. Shall we curet the antrum of Highmore? I am indebted to Robert C. Miles, of New York, for what I give you now on this subject. Dr. Miles told me a few years ago that he had ceased to curet the antrum of Highmore. Why? Because the antrum of Highmore is usually so large that it will not become filled with granulation tissue after curetment. Even when there are great pathologic changes in its mucous membrane the antrum needs only to be opened widely by operation, and it will usually heal up and leave a comparatively healthy mucous membrane covering its cavity. Do not curet. Since he told me this, I have never curetted the antrum, and I have had most brilliant results. No matter how degenerated the membrane may be, I leave it (of course removing the polypi if present) and

it shrinks down and becomes fairly decent mucous membrane, much better than if eurented.

Then the question arises, why is the Killian operation, which includes the curetment of the mucous membrane and periosteum of the frontal sinus, successful? In the antrum operation you do not curet, because it is so large it will not become filled with granulations. In the Killian frontal operation you curet because the sinus is smaller and usually becomes filled with granulation tissue, hence will not continue to suppurate. If, however, the sinus does not become filled with granulation tissue, it will continue throughout life to discharge pus, as the granulation tissue never becomes covered with epithelium. If the frontal sinus is an enormous one, you do not get a complete filling in with granulation tissue but ordinarily you do get the frontal sinus completely filled with granulation tissue: it fills up completely and never again discharges pus.

If you have a very small antrum you may curet it, but do not curet a large one.

Here is a drawing showing the vascular supply of the lateral wall of the nose. Posteriorly is a branch of the middle meningeal; this branch is the bloodiest one of the nose. I formerly feared it very much. Then above and posteriorly is the posterior ethmoidal, and more anteriorly the anterior ethmoidal branch coming down. These are of very little consequence as far as hemorrhage is concerned. On account of my fear of the hemorrhage that was liable to result following operations on the middle turbinated body particularly, I formerly packed the nose twenty-four hours to prevent hemorrhage, but after a time I became accustomed to a little hemorrhage, and did not mind it, and left the packing out altogether, and took a chance on a severe hemorrhage. But a real hemorrhage that endangers the patient does not happen once in 150 operations. So I take great liberty as to packing the nose; indeed, I rarely pack the nose. Packing the nose is exceeding dangerous, more dangerous than the hemorrhage. In one of our large cities I was told three years ago, that in one winter they had four deaths from the removal of the anterior end of the middle turbinated body. They died from meningitis. Death occurred in all probability because they packed to prevent hemorrhage. I do not know this to be true, but that's my impression. The nose is a dirty cavity and you cannot keep it clean. The patient must breathe through it, and if you pack it you prevent drainage, which is so essential. Packing prevents drainage of the upper part of the nose and very commonly develops a septic condition. I would take a little chance on hemorrhage rather than on meningitis. The patient will not bleed to death before some one gets there to check the hemorrhage.

I would like to say a word about the complications of sinusitis, but I want to say a word about another matter which will take up all my time.

Let this represent the nasal septum (indicating); here is the superior turbinated body; here the middle; here the inferior. In doing ethmoid work I developed a certain idea. I have done 900 operations on the

ethmoid, not all done for suppurative diseases of the ethmoid, but many hyperplastic conditions and what not. Here is the orbit and there the antrum of Highmore. Here are the ethmoidal cells between the orbit and superior turbinated and middle turbinated bodies. Professor Killian, a year or two ago decided in his Killian operations on frontal sinuses he should modify his operation. He had one death from meningitis extending via the cribriform plate. He formerly removed the entire ethmoidal mass by curetment; just scraped it out indiscriminately and thought it was the proper procedure, but when he had this death he thought if he would curet the ethmoid cells and leave the superior and middle turbinals (the ethmoidal plate), that he would prevent the infection extending around it to the cribriform plate. He thought that would interfere with the transmission of the infection. Still I am not convinced that this is a rational procedure. Professor Killian has done about 150 frontal sinus operations by his method, and this was the only death out of the 150, that died of meningitis by direct extension through the cribriform plate. I have done about 900 total exenterations of the ethmoid including the superior and middle turbinals without causing meningitis. I therefore think my results more significant than his. If you leave the plate, we have two spaces, each of them narrow. The mucous membrane after the operation becomes swollen on the four walls, and that wall causes obstruction in space number one; it may also become swollen on these two walls (indicating) and you get obstruction in space number two. Always leave a big open cavity rather than two small ones. It is a rule to work by.

In my ethmoidal work and Killian operations I believe that I should not leave the ethmoidal plate, as by so doing I leave two narrow spaces which may become closed by swollen tissue. I believe I should remove the ethmoidal plate because when I do so it is impossible for the mucous membrane on the orbital and on the septal walls to swell enough to close up the space. I always leave a good free opening after my operation, which I could not have if I left the turbinated or ethmoidal plate. Personally I do not believe Professor Killian draws a good lesson from his case. I believe we should always remove the ethmoidal plate and leave a big cavity which allows free drainage and ventilation of the operated area.

DISCUSSION

Dr. Joseph Beck, Chicago: There is very much to discuss on these fundamental and well established facts of anatomical divisions of the nose in reference to sinuses. Dr. Ballenger and I have settled this and talked it over and we absolutely agree on these points. However, there is something that may be added from a pathologic point of view. While the anatomic conditions which he mentioned have a great deal to do with these conditions, there is a true pathologic change in the tissues that need not necessarily be associated with deformities and still subject the patient to recurrent attacks of sinusitis and in fact keep up a chronic trouble. The study of these pathologic changes of course necessitated a number of things, not only by the naked eye, but to go further and make a microscopical study of the changes. I have studied this subject in the last few years by saving these tissues and examining them and I have been repaid by getting

a clear idea of why some of these cases continue to bother the patient in spite of the best operation possible. There are various types of degenerative processes of the sinuses and cells. The anterior group is all Dr. Ballenger talked about, so we will stick to them because the anterior group of cells are the principal cells involved.

After all the work that has been done on the middle turbinated and ethmoidal cells, the real trouble as far as suppuration is concerned in most instances still continues and these patients are subject to recurrent attacks of acute rhinitis and sinusitis.

We are indebted to Killian for the radical frontal sinus operations. The objection to that is on account of the deformity that that operation caused in the large majority of these cases. To obviate this I have developed an operation whose technic is about as follows: Eradicating the mucous membrane of the sinus completely to the bone; furthermore, scrape the bone lightly so as to get a free bleeding so the bone will easily granulate. Keep the cavity open until it has been reduced to a minimum sized cavity by soft granulation. You are all acquainted with the Moorhof plug of spermacetic wax, iodoform, etc., and I have substituted this by the injection of bismuth mixture with paraffin and wax. The details of this operation are the following: The skin incision is somewhat as Killian's, extending down to the ethmoid and making an opening into the anterior wall large enough so the cavity may be explored. You have your x-ray picture to guide you. Then remove very carefully the mucous membrane. After the thorough removal of the mucous membrane pack with gauze saturated with red iodid of bismuth. The reason we use bismuth is that we have found it stimulates granulation better than anything else. Then an opening is left at the inner extremity with a solid rubber tube, such as a catheter tube or a stomach tube which will not collapse, and this tube is anchored by two stitches to the skin. This tube and gauze after three days may be removed and the cavity filled with Bismuth paste No. 2. In the majority of instances one injection is sufficient, though it may require an injection two or three months later. The resulting scar is very small usually, and if it should be large it is easy to excise it subsequently.

Operation on Antrum. The operation may be described as follows: By raising the lip and making the incision on the inner surface of the lip, away from the gingival margin, leaving a nice flap to be dissected off and used for suture subsequently in closing the wound. Then go right down to the bone over the canine fossa of the superior maxilla, and elevate all the structures as far as the infraorbital margin. After that the well instructed assistant uses two retractors, one that pulls the lip up and the other pulls all the soft structures covering the anterior surface of the supra maxilla forwards. Then make a trephine opening and rapidly remove the entire wall of the antrum anteriorly up to the infraorbital margin; then remove the mucous membrane from the interior of the antral cavity the same as in the frontal sinus. A firm rubber tube is sutured into the inner angle and the cavity packed as in the frontal sinus with bismuth gauze and in a few days replaced by Bismuth Paste Nos. 2 and 3. Injections are made for a longer period than in the frontal sinus as a rule.

Dr. Ballenger (closing): I wish to simply state that when speaking of Dr. Miles' work I forget to mention Dr. Beck's work and I was somewhat impressed by it. Of course, I have not seen results, but it made a very profound impression on me. If Dr. Beck's method will produce a complete filling in of the antrum you can curet the mucous membrane. To me it seems to be difficult in some cases. The posterior part of the nasal wall is very thin. Then in these exceptional cases where there are accessory openings, that would render his operation impossible. If you get complete filling in by Dr. Beck's method, you must absolutely wall off all the nasal secretions and the secretions from the mouth, but if that can be done it will be an excellent method.

PRIMARY MELANOTIC SARCOMA OF THE IRIS, FOLLOWED BY EXTENSIVE METASTATIC MELANO SARCOMA OF THE LIVER

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The history of the case here recorded is the basis for these general remarks bearing on the clinical features of sarcoma of the iris and chorioid.

The literature, as well as clinical experience, shows that the metastasis, either local or general, is usually longer delayed when the primary sarcoma is still intraocular, small and located in the posterior half of the globe—especially posterior chorioid. The growth of a sarcoma in the iris or chorioid is relatively slow, though as a rule melanotic sarcoma elsewhere progresses and multiplies rapidly, e. g., hepatic sarcoma. Any intraocular sarcoma which perforates the globe causes the earliest known general metastasis. Fortunately, these cases are rare.

Should, however, the sarcoma be in the ciliary body or iris, metastasis is soon to be expected, though the primary tumor (in iris) has been removed even early in its growth. This latter is particularly true when a tumor is in the root of the iris, small and accompanied by little reduction in vision, and though recognized early, as patients dislike to sacrifice "a seeing eye." Very frequently these patients are more or less encouraged in resisting enucleation by their attending physician who favors iridectomy. An iridectomy is but a tantalizing operation, often being a direct stimulus for producing metastasis. This because of the fact that many of these iridic sarcomata in the very early stages are readily mistaken for little mounds of iridic pigment. Every little, discrete or circumscribed suspicious mound of pigment, irrespective of its location in the iris, accompanied by even the slightest vascularization should be carefully studied and watched with reference to its increase in size. For, should it increase in size and vascularity and corrugate the immediate iris tissue, then this little mass should be looked on as being suspicious of sarcoma, removed by a suitable iridectomy and subjected to the microscope. If, on examination, the suspicions of sarcoma are verified, then a radical enucleation, irrespective of the state of vision, should be insisted on.

In this regard it matters not how small the tumor or where its location is in the iris. The hesitancy to enucleate because the sarcoma is small, situated in the readily accessible portion of the iris and apparently easily removed by an iridectomy and no other signs of sarcomatous involvement, is but tantalizing fate, jeopardizing the longevity of the patient and subjecting him to the dangers of a most harrowing death, usually due to extensive hepatic melanotic sarcoma. Though we class sarcoma as melanotic and leukomatous, yet, every sarcoma is more or less melanotic—only the ones apparently deficient in pigment are designated as a leukosarcoma in a purely empirical morphologic classification.

The gravity of metastasis seems to be in a measure proportional to the melanosis, and the rapidity of growth of the primary sarcoma itself

is likewise in a measure proportional to the melanosis. The nearer a sarcoma resembles a typical fibrosarcoma the more often do we find a relative scarcity of melanosis. In this class of tumors one may, on broad general principles, say that the dangers of an early ocular general metastasis is in inverse proportion to the melanosis and fibromatous nature of the sarcoma. As the sarcoma in general manifestly partakes of the pigmentary nature of the tissue in which it originates, i. e., a greater melanosis the more heavily pigmented the tissue is, we can readily see that a true leukosarcoma is a rarity in the iris and chorioid; though most, if not all, have a decided creamy colored tinge, owing perhaps to the varying amounts of accompanying exudates.

Since, also, the dangers of early metastasis are greater when the primary sarcoma originates in a highly vascularized tissue, therefore, we can see the gravity of the condition when we have such a growth in the iris or chorioid. Particularly is this true of the iris, as it is the most vascularized tissue for its size in the body. And, as the sarcoma travels mainly via blood-channels, we can readily see that, unless a radical operation is performed, the patient is always in danger of an early localized recurrence or a general metastasis—usually hepatic. In many instances local and general metastases go hand in hand after the primary excision of the growth in the iris. That a small percentage of cases show an apparent cure after iridectomy is no just reason why we should subject the large balance to such dangers. On the other hand, there are many evident conditions in an iris sarcoma which all point to unavoidable local or general recurrences should an iridectomy be deemed a sufficient radical measure. The mere fact that it grows slowly is no proof that metastases appear slowly—rapidity of growth and metastasis are not proportional even though melanosis and metastasis are seemingly so.

It is no doubt true that sarcoma cells may be carried to distant parts, then lie dormant for many years not producing a tumor, though the original tumor was removed apparently sufficiently early. These transferred cells do not grow until a stimulus therefor has been engendered. Whether or not these malignant growths are or are not caused by misplaced embryonal cells does not alter the status of metastasis or malignancy.

If one had any definite and positive facts which would tell us when, and when not, a primary sarcoma of the iris would, or would not, give rise to a metastasis after an iridectomy, the proposition would be entirely different. But being unable to determine this in any way, iridectomy should never be considered.

General surgical principles, therefore, unswervingly teach and demand a radical operation for any malignant growth—especially in a densely vascularized tissue or one abundantly supplied by lymphatics, in order to give the patient the best chances for recovery and the avoidance of metastases. These principles likewise teach a radical operation for even a small malignant growth irrespective of its nature. Hence, an eye, and the iris particularly, being an exceedingly vascular structure, harboring

a sarcoma of any type or size, an enucleation is the order of procedure as soon as a diagnosis is made.

The only legitimate reason for an iridectomy in sarcoma of the iris is for diagnostic purposes, which should be made instantaneously at time of operation, and the enucleation should follow within as short a period thereafter as is necessary to determine the malignancy of the growth. No iridectomy of any size—unless the entire iris is removed, and this is impossible—can be considered a radical operation from a surgical standpoint.

Intraocular sarcomata, especially those of the iris, are seldom if ever encapsulated (a rather massive exudate walling the tumor off). It is only the so-called encapsulated variety that will permit of anything less than a radical excision or enucleation with seeming success. The sarcomata of the iris are usually vascular and not "encapsulated," while the fibrosarcoma is frequently in a sense avascular. Therefore, the former shows greater tendencies than the latter to local or general metastases. The mere fact that an iris sarcoma is less frequently accompanied by an "encapsulating exudate" than is the sarcoma of the chorioid, and is of relatively slow growth is no criterion that metastases are also slow in developing. Yet this fact seems to give a sense of security to operators who think an iridectomy is sufficient when in truth no condition of the sarcoma can foretell the metastasis. It is because of this fact (encapsulation), perhaps, that a primary chorioidal sarcoma offers a far better prognosis than an iris sarcoma.

Nearly every chorioidal sarcoma is accompanied by an encapsulating exudate, some more, some less; the more the better. It does seem as if this enveloping exudate has a tendency to retard metastasis. This point was noted in quite a few cases.

By far the majority of the iris sarcomata are situated in the more vascular portion of the iris. No cogent reason can be assigned for this selection. Accordingly, a sarcoma near the root of the iris, or between the root and the larger vascular circle, is more prone to metastases than one between the larger and the lesser vascular circle or one between the lesser and the pupillary edge.

The iris is most vascular just at its root and a millimeter or so from the pupillary edge. And, as a majority of sarcomata appear in these two regions, the necessity for an early and radical enucleation is well taken from the previous remarks. The melanosis also seems to be greater, the nearer the tumor is situated to the iridic root and the ciliary body.

As all sarcomata are more or less melanotic—some having but limited areas of melanosis, others apparently very melanotic, yet on examination prove to be only sparsely so; and, as the melanosis seems to bear a relative proportion to the early metastasis, therefore, one can reasonably conclude that patients living fifteen or twenty years after the enucleation for an iris sarcoma were cases in which the sarcoma was not intensely melanotic or belonged to the order of fibrosarcomata. Indeed, the fibrosarcoma shows a greater tendency to a so-called encapsulation than does any other variety, even though it may be intensely melanotic.

Whether the sarcoma is largely made up of small round cells or spindle cells does not alter the question of metastasis as explained on the ground of melanosis.

Surgical experience and principles have proven that of all malignant growths, the sarcomata, especially when encapsulated, and when situated

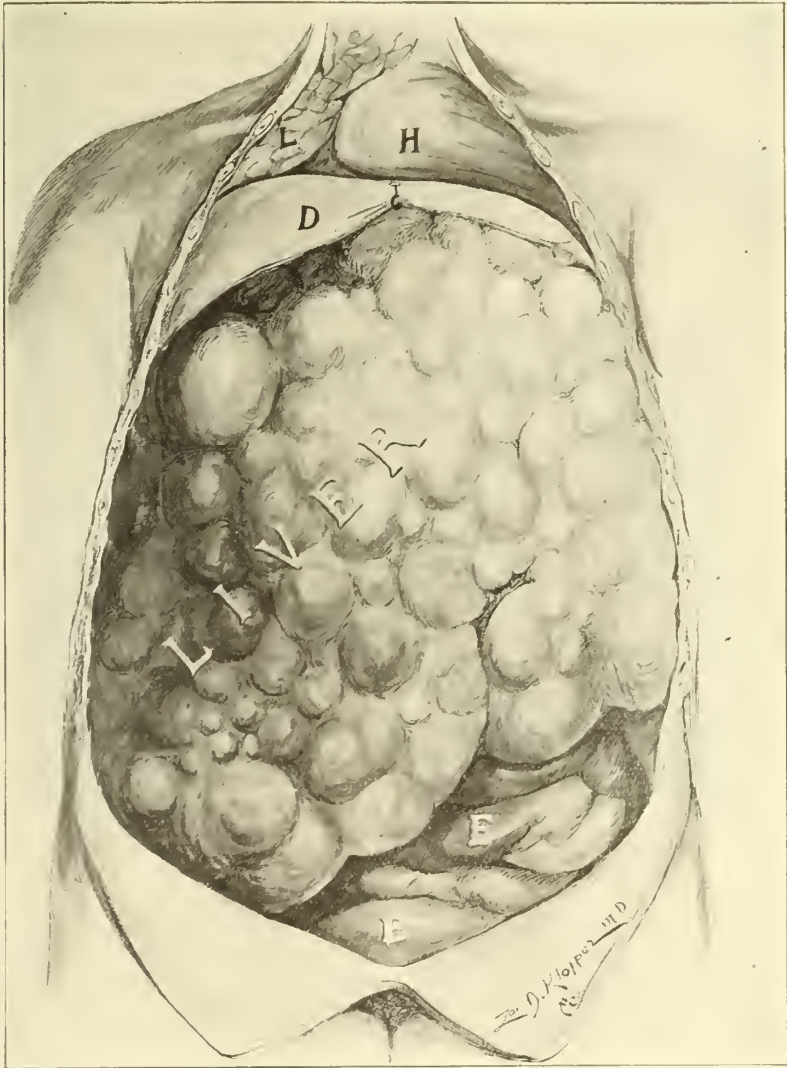


Fig. 1.—Case described.

in an easily and readily accessible position and when radically removed, seldom cause very early local recurrences, or very early general metastases.

A recurrence after five or more years, after an iridectomy, does not constitute a valid cure for the interim, but such a freedom is only palliative or bridging the chasm of dire end-results, as metastases are only too liable to supervene. But, if after an enucleation five or more

years should elapse, without a local recurrence in the socket, then the probabilities for a general metastasis or local recurrence is indeed a minimum danger. That this contention is well founded and that the patient usually lives his allotted, or nearly his allotted space is a hundred fold as great as when only an excision of the iris is made. No matter what the state of the vision, or size of iris tumor, always enucleate, and above all, enucleate with as little damage to surrounding tissues as possible, undue bleeding and interference with orbital tissue.

And why—because by far the majority of intraocular sarcomata, as stated, are primary growths—a metastatic ocular sarcoma is a *rara avis*. Indeed, some maintain that it never occurs. Therefore, this growth being the primary one, still limited and practically isolated, it does seem drastic to insist on removal of an eye, still having 20/20, or thereabouts, vision, for a sarcoma of the iris no larger than a pin head, when an iridectomy can be so easily made, with apparent success, and seeming



Fig. 2.—An exenteration of orbit, maintaining a small socket so as to wear a shell. Iris sarcoma with final hepatic metastasis and death within two years.

entire removal of tumor. But, iridectomy is not a radical measure as radicalism is understood by the surgeon. An enucleation, that only, is in compliance with the idea of radicalism in surgery. A radical operation is the order of things for giving that patient the best possible chances for a permanent recovery.

An observation worthy of note is this, when the intraocular sarcoma is accompanied by a liberal exudate into the surrounding tissues, walling it off as it were, the prognosis is infinitely better than when no exudate is present. In passing, we can say that a single intraocular sarcoma offers better prognosis than a multiple growth. For, every other growth, other than the first, or single one, is a local metastatic one—there is no such a manifestation on record as a multiple intraocular sarcoma. To

repeat, sarcoma of the iris shows early evidences of local iridic metastases, hence, the fallacy of an iridectomy. Sarcoma of the chorioid, unless well forward, does not exhibit this marked tendency to early local metastasis. But a chorioidal sarcoma in the region of the ciliary body exhibits the same tendency for local metastases as one in the iris. A sarcoma of the iris near the root is significantly prone to early metastases, next in frequency when located between root and larger blood circle. Then comes the one in between the larger and lesser vessel circles and the one having the least tendency to an early local metastasis is in the pupillary edge or between this edge and lesser blood circle. However, these facts offer but a slim consolation and ought not to determine whether to do an iridectomy or enucleation. No matter what may be the inherent characteristics or individual peculiarities of the iris sarcoma—an enucleation is obligatory.

As already stated every sarcoma is melanotic, even a leukosarcoma has pigment, and the viciousness of the sarcoma apparently seems to be proportional to the amount of pigment it possesses. Yet, frequently, a so-called leukosarcoma will suddenly become heavily pigmented. Then why try to differentiate as to the prognosis, as some endeavor? True, the leukosarcoma is more frequently on the order of a fibrosarcoma than is the melanotic, yet there are no signs by which one can tell when an apparent leukosarcoma will become entirely melanotic or attain sufficient melanosis as to be classified as melanotic rather than as a so-called leukomatous sarcoma.

Every local metastasis after a primary excision of that portion of iris containing the sarcoma, distinctly increases manifold times the dangers of a general metastasis, particularly hepatic. A search of the literature of such cases shows that the fatal end occurs usually within five or less years. There are cases in which an early enucleation for the iris sarcoma was made and the fatal metastatic condition delayed five to fifteen years; and, in many cases the patient lived his allotted span and died of intercurrent trouble.

The following case history and pathologic report by Dr. Grosvenor exemplifies all the points above made:

Mrs. A. H., aged 29 years, was first examined by Dr. Suker in June, 1907. The following history was obtained.

In 1901 the patient first noticed a small black spot in iris above the pupil of the right eye. This was directly after a full term pregnancy. Dr. Harper of Chicago was consulted, and in December, 1901, performed some conservative operation for removal of the growth, presumably an iridectomy and followed it with x-ray treatments for eighteen months.

No recurrence was noted until March, 1904. The cure, at the time, was thought complete as two years and three months had intervened; then within two months the growth attained the size of a large pea. So that in September, 1904, Dr. L., of Hastings, Mich., performed a second operation without removing the globe. In February, 1905, the growth was again noticed and treatment was undertaken with some patent preparation without result. She did not report again until October, 1905, when condition was so much worse that the globe and surrounding diseased tissues were fairly well extirpated, the wound healing slowly.

Dr. Bonine of Niles, Mich., reported finding at this time several peculiar growths at the limbus of the cornea—small and somewhat pigmented. During the interval she again gave birth to a healthy child.

In March, 1906, small dark nodules were again noticed in the socket and Dr. Harper advised "therapeutic light" treatments. This was continued for two months.

On May 28, 1906, she was examined by Dr. E. V. L. Brown of Chicago. He noted two small dark nodules on the surface of tissues in the socket. Left eye was found normal other than a large refraction error, which was corrected; + 5.00 cy. axis 80°=20/40.

In November, 1906, the patient reports having much pain in the right socket. The two bluish pigmented areas beneath the mucous membrane at the apex of the socket are increased in size. Cachexia is very noticeable.

In January, 1907, she returned and reported that she was six months pregnant. The bluish area is now distinctly black and still larger. Exenteration of the orbit was advised. In June, 1907, when Dr. Suker first examined her, further history was elicited.

The patient has borne five children. During her third pregnancy she first noticed the black spot above the right pupil. During the intervals between her pregnancies there has seemed to be no growth of the tumor, but when pregnant the progress has been rapid. She has now a healthy child two months old. Since its birth the tumor in orbit has increased in size and finally became very painful and the lids and surrounding tissues edematous.

On July 12, 1907, Dr. Suker did a complete exenteration of the orbit and sinuses. A large node about the size of a small egg was found in the orbit. The upper lid was involved and was partially removed, the edge of lower lid was also removed and the two stitched together, after packing the orbit with gauze, leaving an opening at the external canthus, for drainage. This wound healed kindly and rapidly. While on the operating table a careful bimanual examination of pelvis and abdomen was made revealing many small nodes.

In December, 1907, because of much abdominal pain an exploratory abdominal section was made (Drs. Gronnerud and Pennington). The entire liver was found studded with various sized bluish black nodules. Nothing further was done, and from this time on the abdomen rapidly became larger. There was a marked cachexia at this time. She died April 23, 1908.

At the post-mortem examination the liver (see cut) and left eye were removed; the right orbit was clear of any diseased tissue. There were no local recurrences in exenterated left orbit.

Pathologic examination of the nodule from the orbit.

An irregular egg-shaped nodule encapsulated, 20x15x15 mm. in size. On the outer surface was an irregularly thickened layer of epithelial cells. Elsewhere there is a capsule of fibrous tissue.

Stained sections were made of the tumor in its largest diameter. These present many irregular areas of variously stained cells, some areas made up chiefly of large round sarcoma cells with very scant pigmentation; others, however, are very densely pigmented. Separating these areas are thin fibrous bands. Some alveoli contain nothing but darkly pigmented cells, while others in immediate apposition may be entirely free from pigment. The pigment granules are imbedded in spindle or stellate cells—chromatophores. These chromatophores in some places are in parallel lines, again they are in irregular clumps, where they are densely crowded about the new blood-vessels. About some of the larger and older blood-vessels, near the margin of the tumor there is more or less infiltration of small round cells. Again, areas of tumor structure

densely infiltrated with blood corpuscles, apparently a pouring out of blood from the new formed blood-vessels. Where melanosis is scant there are the small round sarcoma cells. Again other areas seem to be made up of spindle cells, with more or less pigmentation. The most densely pigmented areas are chiefly of large round cells compressed into all sorts of irregular forms and densely packed with the pigment granules.

Altogether this presents a typical picture of melanotic sarcoma secondary to the primary involvement of the iris as noted in the history.

The liver showed many necrotic foci and innumerable sarcoma nodules throughout its entirety.

The conclusions aptly to be drawn from this case are:

1. The marked tendency for local recurrence in the iris of the sarcoma.
2. The marked tendency for local recurrence even after enucleation.
3. The enormity and rapidity of the hepatic metastasis, after the sarcoma started on its way to increase in size, after the birth of the last child.
4. That each pregnancy (four in all) was associated with a local metastasis—beginning with the primary iridectomy.

RINGWORM INFECTIONS AND THEIR MANAGEMENT*

J. S. EISENSTAEDT, S.B., M.D.

CHICAGO

Infection with the ringworm fungus is an extremely frequent occurrence and in this city, as reports from our department of contagious diseases show, is of considerable economic importance. The figures show that in 1908, 358 cases were excluded from schools by the examining physicians; in 1909, 1,003 cases, or nearly three times the number of the previous year; while in 1910 but 494 cases were excluded as a result of ringworm infection. The discrepancy between the cases excluded in 1910 as compared with those excluded in the preceding year I cannot explain. It is almost certain, however, that there are more cases to-day than there were even in 1909. In a most excellent paper read in January, 1909, by the late Dr. Hyde, he said that he believed that there were more cases of ringworm and favus in Chicago than in Paris, where on one service alone 1,800 cases are treated annually, for which statement he gave the following reasons:

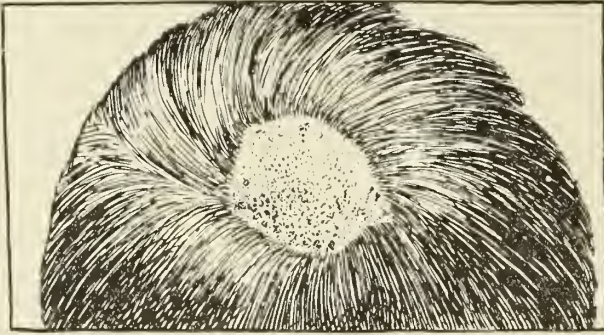
1. The slums of Chicago are reported in Scotland Yards, the English central police investigating bureau, as worse than those of London or New York.

2. The population of the lowest social class in Chicago is mixed, that in London and Paris is much more homogeneous.

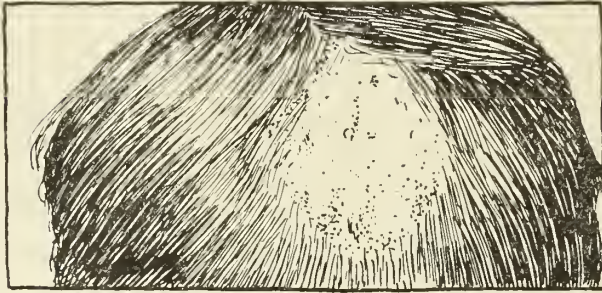
3. School inspection and care of ringworm cases is conducted in the capitals of Europe by men who have the opportunity to devote the most scrupulous attention to the cases in hand and to use the most approved treatment.

* Read before the Chicago Medical Society, May 29, 1912.

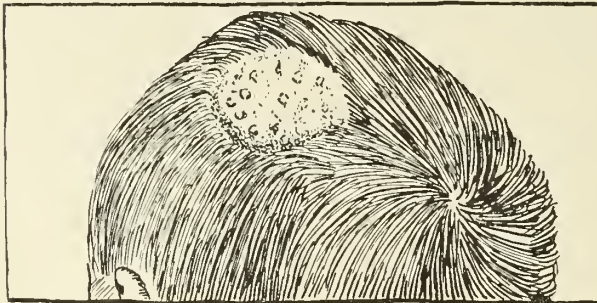
The figures above cited then represent merely those cases reported by the school examining physicians and nurses, and hence may be taken to represent only those cases of school age excluded, omitting a large



NON-INFLAMMATORY TYPE



SOMEWHAT INFLAMMATORY TYPE



MARKED INFLAMMATORY TYPE

Ringworm of the scalp.

Fig. 1.—Ring-worm of scalp, showing three clinical varieties.

number of cases affected before the sixth year and a certain number that are unrecognized. The city of Chicago, like all other cities in this country, makes no provision for children affected with ringworm. The recognition

of ringworm prevents the child from continuing his schoolwork until he is cured. This means that such children may have to absent themselves from school for periods varying from several weeks to one or two years. Many cases of *tinea tonsurans* or ringworm of the scalp lasting under the ordinary treatment even longer than the time suggested. The great waste of time for some of the children is very apparent, and not only that, but many are deprived once and for all of school advantages during the period of treatment or neglect thereof.

It is not my intention to intrude any more figures to show how great the loss is to these children nor to astound with calculations showing the number of school hours or days missed by them. However, I believe when one views the subject frankly that no provision for the education of these children is made while affected with ringworm, and no adequate treatment supplied except by certain dispensaries and medical schools; that the economic loss to these children and to society as a result of this disease cannot be overestimated.

Ringworm infections are due to various fungi and the credit is largely Sabouraud's for a thorough classification of them. Gruby, however, in 1841, recognized the plurality of the causal fungi and as early as 1853 Bazin published an article confirming Gruby's observations. Malmeston, in 1844, quite independently discovered one of Gruby's fungi which he called "*trycophyton tonsurans*," which until quite recently was thought to be causal in all ringworm affections. Sabouraud's investigations make two chief divisions of etiologic fungi: 1. The *microsporon audouini* or small spored fungus, and 2, the *trycophyton* or large spored fungus, the latter having two main varieties, the *endothrix* and *ectothrix*, of each of which in turn there are several species. A detailed description of all of these would lead us too far and has no practical value for the clinician.

Ringworm is contracted by contact with persons suffering therefrom or with contaminated articles such as caps, brushes, towels, combs and razors. Cases of direct infection from infected animals are authentic, especially from the horse, dog and cat. I have seen a case in a hostler in whom the infection was positively traceable to the horse he had been earing for.

Ringworm may be of general distribution or confined to either the hairy or non-hairy parts. In children we are chiefly concerned with ringworm of the scalp because of its frequency and difficulty of treatment, although the non-hairy parts are often involved. In order not to intrude too much on your time I shall not discuss ringworm infections in the adult more than to mention the well-recognized but difficult condition to treat hypophogenous syecosis or barber's itch, and *eczema marginatum* or ringworm of the inguinal and axillary regions.

Ringworm of the non-hairy parts or *tinea circinata* may appear on the face, trunk or extremities and presents one, several or more sharply defined, somewhat scaly, very slightly raised, hyperemic spots, which spread peripherally and tend to clear up in the center assuming thereby a ring appearance. In size the lesions vary from $\frac{1}{2}$ to $1\frac{1}{2}$ inches in

diameter and when several lesions merge they may form a large irregular gyrate patch. Some cases are scarcely distinguishable from pityriasis rosea of Gibert; and in fact, the Viennese school for a long time refused to recognize pityriasis rosea as a distinct condition. Recently a young girl, aged 13 years, came to the dermatologic clinic at Northwestern University Medical School for treatment. She presented what was apparently a case of pityriasis rosea, although the lesions showed rather more inflammation than is usual in this condition. Her younger brother was at this time under treatment for a large spored ringworm of the scalp contracted at one of the parochial schools. Her case may be one in which the Viennese school would still insist on a diagnosis of herpes

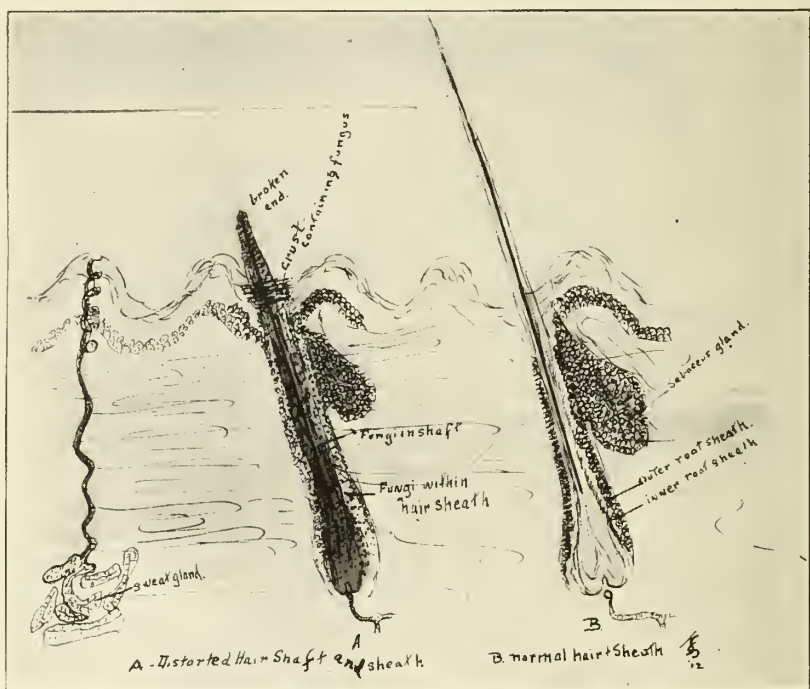


Fig. 2.—Section of scalp, showing normal hair and sheath and one attacked by ringworm fungus.

tonsurans maculosus although no fungi were found in examination of the scales. The absolute independence of the conditions in these children I believe is open to question.

The following conditions may at times simulate more or less closely tinea circinata, namely, a circinate syphilide, psoriasis and seborrheic dermatitis, but a careful history and clinical examination to which at times microscopic examination of the scales and a Wassermann reaction might be added, should quickly clear up the diagnosis in almost all cases.

Ringworm of the scalp is the most important type, and for many of the poorer children of our city and other large cities the cross which they must bear for a longer or shorter period. It is the factor which may

determine whether such child will be literate or illiterate, and therefore is of great economic and sociologic importance. It is in this type of case when the clinical diagnosis offers the slightest difficulty; a microscopic examination of an involved hair and of adjacent scales is essential to a conclusive understanding of the condition at hand. We are all familiar I take it with the usual appearance of a ringworm patch on the scalp which may, however, show variations dependent on the type of causal organism. For example, the lesion caused by the endothrix with so-called "resistant" mycelium presents a characteristic greyish-blue tint and is covered with fine furfuraceous scales and the broken hairs in the area give the appearance of a beard of four or five days' growth. In another type the patches are irregular, poorly circumscribed and scattered broadly among the healthy hairs. Sometimes in less typical cases one notes only here and there diseased and broken hairs, while in blond children one may discover merely decolored hairs and slight scaliness. Other types are somewhat more difficult to recognize clinically. To this number must be added "kerion celsi," or the markedly inflammatory type of trichophytosis caused always, according to Sabouraud, by the trichophyton endothrix. This lesion has been frequently mistaken for carbuncle and other deep-seated bacterial infections. In marked cases it appears as a greatly elevated, swollen, reddish, painful tumor. It is usually single and may reach the size of half an orange. Fluctuation may be determined and a glairy mucopurulent or sanguino-purulent discharge is readily expressed. The hairs on the surface are easily removed causing no pain to the patient. Following the removal of the hair shafts a small amount of exudate wells up from the root sheath. This phenomenon gives us the clue "par excellence" in ringworm therapy, not only for the kerion type, but in all cases involving the hairy parts: namely the complete removal of hairs in involved areas. The removal of the hair in toto in infected areas constitutes the essential point in successful treatment in ringworm of the scalp. I say this because with the removal of the hair we not only dispose of many of the organisms, but as it were remove the stopper from the hair sheath, permitting the exfoliation of the infected lining cells and with them the etiologic fungi: furthermore, allowing what subsequent medication we may see fit to use to reach the infected parts below the cutaneous surface, if this be actually possible.

Now to return to the microscopic examination of the scales and suspected hairs. This is one of the simplest procedures, comparable with the examination of urethral pus in searching for gonococci. The procedure is best carried out as follows: The child's head is held in good light so that a clear view is obtained of the lesion and then with an ordinary epilating forceps a suspicious appearing hair, with the scales about the mouth of the follicle, is removed. If to be examined immediately it is placed in a small watch crystal containing 20 to 40 per cent. caustic potash solution, in which they are left for ten or twelve minutes, which time, however, may be shortened by heating gently over an alcohol lamp. The specimen is then placed between a clean glass slide and cover slip and examined, first with the low power of the microscope and then with

the higher power, being certain to have the iris diaphragm closed down. The oil immersion is unnecessary. If ringworm is present one sees within the distorted hairs and scales dichotomously branching mycelial threads and more or less extensive spore formation, depending somewhat on the character of the causal fungus and the degree of involvement. A description of the various pictures one may see under the microscope is not in place here and has little or no practical bearing on treatment. One will however, after a careful examination, at least know that he is dealing with ringworm, a contagious condition, and not for example with an alopecia areata or a case of psoriasis, and will be in a position to start proper prophylactic and therapeutic measures.

Briefly in regard to differential diagnosis, there are only a few conditions that closely simulate the lesions of ringworm of the scalp; especially favus and alopecia areata. Favus is not as rare in this country as might be supposed from the fact that it is a cause for barring immigrants from landing. In favus, while the same tendency to brittleness and lack of luster of the hair is noted, the presence of the characteristic scutula and crusts and atrophic scars in the healed areas are very different from the baldness and scales of trichophytosis. Alopecia areata is distinguished by the completeness of the hair loss in the areas affected and the absence of scaliness, the skin being shiny and very smooth. In either case a microscopic examination of hairs or crusts should lead to a diagnosis in doubtful cases. Eczema, seborrheic dermatitis and psoriasis should give little difficulty to the careful observer.

Having made an accurate diagnosis of the condition at hand it is necessary to treat it rationally and thoroughly and prevent the patient from infecting his relatives and associates. The child with ringworm, being usually of the poorer classes, should be placed in a school where he can, while he is undergoing an approved and modern treatment, still continue his studies and at the same time not be a source of danger to others. If this plan is not feasible or practicable at this date, I make the plea that some modification be suggested by which these children at least are given a fair chance to become useful citizens and are not forced by circumstances to be ignorant and to possibly become criminal.

The treatment of ringworm of the glabrous skin is usually so simple that we may rapidly dismiss it, for the lesions being superficial may be successfully treated by any of the many parasitocides. Of this number may be mentioned chrysarobin, beta-naphthol, white precipitate of mercury, ichthyol, resorcin, salicylic acid, sulphur and many others. Apropos of this condition Sabouraud's rule says that when the parasite is superficially located it is easily killed, but when deep-seated it is unreachable by ordinary medicaments.

The treatment of ringworm of the scalp is now generally recognized to be adequately carried out only by means of the x-ray. To be sure, many, in fact, most cases can be cured by other methods if only one persists long enough. The time needed, however, may be very long, even two or three years. Other cases, especially those of the markedly inflammatory type, may heal spontaneously by suppuration, leaving often permanent baldness. In these cases the epilation or removal of the entire

hair is automatic and a cure is rapidly effected. Epilation, when possible (and by the term epilation I mean the removal of the entire hair and bulb), is a satisfactory but slow and somewhat painful method of effecting a cure. But many hairs cannot be epilated inasmuch as the parasite produces fragility of the hair and it is broken off leaving the contaminated deeper portion in the skin. Devergie said that he had observed in the service of so excellent a man as Bazin, children affected with ringworm, who appeared in the same condition as when they entered in spite of attempted epilation and applications of parasitic lotions and salves for months. Bodin in this connection says: "The elements of this disease deeply infiltrated as far as the root extremity of the hair find in the hair pouch a sure and inviolable asylum, for no parasiticide, whatever its form and in whatever condition employed, can penetrate by reason of the anatomic disposition of the hair shaft in its pouch." Knowing that we cannot within a reasonable time effect a cure by antiseptics and parasitocides, it is necessary absolutely that these children be given the benefit of the Roentgen rays by which the hair filaments are so readily removed.

Treatment should be carried out by a competent x-ray operator who is careful and certain to avoid any of the untoward effects of the rays. Generally an area responds to treatment given in the following manner: It is exposed to the rays for a period of six minutes with a medium tube, e. g., 8 wehnelt, at a distance not nearer than 6 inches from the head. In cases of larger distribution it may be necessary to expose the involved areas at different times because they cannot be satisfactorily gotten under the influence of the rays at a single sitting. In this event the parts that had been previously rayed must be covered with tin foil or lead foil or other substance impenetrable to the rays. Each area usually demands between six and eight exposures given either bi- or tri-weekly. A reasonable period, let us say, three or four weeks, is permitted to elapse during which time one expects a complete hair loss in the treated areas. If this does not occur a new series of one to two exposures may be instigated exercising, however, even greater care than in the first series. It is true that a complete hair loss may be obtained in a single sitting of longer time and with greater ray potentiality. This, however is considered dangerous and inadvisable. Combined with such treatment one may use green soap washings and painting with tincture of iodine, although this is not absolutely necessary. The healthy hairs, some weeks after the cessation of treatment, usually commence to grow in anew. The disfigurement of baldness soon disappears. During the treatment the child should wear some material which may be discarded daily, as a lining in his cap, and should be forbidden to exchange under any circumstances his cap for that of another.

Furthermore let us not forget the admonition of Sabonraud to his students, "When any one tells you that he has cured an ordinary ringworm of the scalp in three weeks, reply to him that it requires at least six weeks to determine whether the patient is cured. Frequently they have cured an eczema seborrhoicum or something else, but they have not cured a case of trichophytosis. Their first error was a mistake in diagnosis and their second in the diagnosis of the cure."

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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OCTOBER, 1912

THE BOARD OF HEALTH IN REAL POLITICS

At last the conditions in the State Board of Health have reached a stage where they can be no longer ignored. This fact was brought out in the open letter addressed to Mr. Deneen by State Senator Frank H. Funk, dated Chicago, Sept. 20, 1912. Prominent among the questions asked Mr. Deneen is the following: Do you intend to retain Dr. Egan as secretary of the State Board of Health, or have you promised some members of the Illinois State Medical Society to let him go immediately after the election? This question of Mr. Funk we are pleased to notice because it brings forcibly to the attention of the profession the unusual and disgraceful method of treating this subject, which has been pursued by Mr. Deneen in the past four years. A course of conduct we may add which has estranged from Mr. Deneen many of his former friends and admirers who have lost all patience with his political methods. We have been urged by many of our members to ask the members of the medical profession, the dentists and the pharmacists to write letters to the respective candidates for governor asking what action in cleaning up the department of health he will adopt should he be elected to office. Of course, it is not part of THE JOURNAL to take up any political discussion, but no harm can be done by addressing letters such as we have indicated. It is certain that the disgraceful state of affairs in connection with the Department of Health has passed to a stage where it cannot be longer ignored by intelligent and thoughtful members of the three professions.

REPEAL OF THE SHURTLEFF BILL

The citizens' milk committee of Chicago will probably take up in a short time the matter of the repeal of the Shurtleff Bill, prohibiting the tuberculosis test of milch cows. It would be taken up now, but it seems that certain gentlemen fear that harm might result from its being injected into the present political situation. In other words, it might result in losing some votes for the present incumbent of the gubernatorial chair. This only adds another reason why medical men should get busy in exerting their influence to defeat the persons, including the *de facto* members of the State Board of Health, responsible for the passage of the bill and the governor who signed it after it was passed.

THE "TRY"-STATE MEETING

The twentieth annual "Try" at a meeting of the medical society, drawing its membership from Missouri, Iowa and Illinois, was undertaken at Jacksonville, September 24 and 25, as noted in our last issue. We understand that after the vigorous use of the press and postage as many as forty gentlemen assembled on this occasion in the Morgan County Court House, and although the circuit court room of that structure is not particularly large, these gentlemen had no difficulty in holding their meeting inside the rail reserved for attorneys. As this society publicly and conspicuously announces that membership in a county society is not a qualification necessary to membership, we reiterate our statement that it would be a good idea to abandon the organization and disperse. At least the officers should not attempt longer to secure attendance from among the members of organized societies.

RESULTS OF EXAMINATION HELD BY THE ILLINOIS STATE BOARD OF HEALTH

EXAMINATION IN SPRINGFIELD, JUNE 13, 14 AND 15, 1912

The results of the examination held by the State Board of Health on June 13, 14 and 15, 1912, at the Armory in Springfield, Ill., are as follows: Present, 212; passed, 158; failed, 51; three incomplete.

College	PASSED	Year Grad.	Total No.
American Medical College		1912	2
Bennett		1911 (1), 1912	4
Chicago College, Medicine and Surgery		1912	33
Hahnemann, Chicago		1912	10
Hering, Chicago		1912	1
Kentucky School of Medicine		1903	1
Marquette University		1912	1
Northwestern		1911 (1), 1912	42
Rush		1912	13
St. Louis University		1912	7
University of Illinois		1911 (12), 1912	37
University of Michigan, "R"		1912	1
Vanderbilt University		1912	1
Washington University		1912	5

College	FAILED	Year Grad.	Total No.
American Medical College		1912	8
Barnes	1906 (1), 1910 (1),	1911	3
Bennett		1912	1
Chicago College, Medicine and Surgery		1912	2
College of Medicine and Surgery, "P.-M."	1908 (19), 1909 (13)		2
Hahnemann, Chicago		1912	8
Hering, Chicago		1912	1
Mcharry		1908	1
Marquette University		1912	2
National Medical University		1910 (16)	1
Northwestern		1912	2
P. & S., St. Louis		1910	1
Queen's University, Ont.		1912	1
Reliance		1911 (13)	1
Rush		1912	1
St. Louis University		1912	2
University of Illinois		1911 (2), 1912	12
University of Louisville		1912	2

Below are the names of those who were successful:

CHICAGO ILLINOIS

Aleock, Nathaniel Graham	Goodman, Jacob
Bassler, Herman H.	Green, Otto J.
Baxter, Ada Russell	Greenberg, Louis M.
Beilin, Aaron Max	Greening, Richard F.
Berkman, David Mayo	Hade, Fred C.
Beyerlein, Arthur Lewis	Hagerty, Thomas Walter
Bohling, Bernard Stanton	Hallberg, John William
Boone, Jesse F.	Harris, Lyndon Denny
Boren, John William	Harris, Ella Elizabeth
Boswell, Harry Dillman	Harrington, Raymond Regan
Boyer, Eugene Radford	Hayes, Daniel Francis
Brams, Wm. A.	Heidel, Cecil Theodore
Breeden, Roy Fred	Heller, Jr., Matthew
Carlin, Charles John	Heller, Frederick Merwin
Christoph, Carl Henry	Henderson, Curtis
Cohn, Emanuel J.	Henson, Earle Edmund
Cummins, Erwin Jephtha	Himmelman, Harry C.
Dale, Philip Marshall	Hubbard, Argal Ernest
Davis, James Robert	Hutton, James Harry
Delzell, David D.	Jacobs, Frederick Caspar
Deners, Washington Irving	Jared, Vernon Meadows
Di Casola, Frank	Jones, David Jameson
Donahue, Stephen Alphonse	Joyce, Paul Vincent
Dudley, Erwin F.	Knoll, Robert Frederick
Fattooh, Naum G. N.	Koerper, Herman Wm. Julius
Finley, Robert L.	Lavieri, Jack Ralph
Fishbein, Morris	Lobraico, Rocco Vincenzo
Fisher, Arthur H.	Marrs, Frederick Addison
Fisher, Erle F.	McArthur, Selim Walker
Flack, William D. P.	McGuire, Wm. Aloysius
Freedman, Abraham Albert	McLaughlin, Warren B.
Freudenburg, J. A.	Moss, Charles Taylor
Friedman, Herman J.	Olson, Olwer S.
Frisch, Isaac J.	Pedott, Meyer S.
	Peters, John

CHICAGO, ILLINOIS

Reinsch, Herman
Robertson, Arthur Thomas
Roche, Richard Ambrose
Ross, Samuel John
Rupert, Richard Root
Sanders, Audley
Sasko, Martin P.
Scholles, Alphonse Francis
Shipman, Frank Edmund
Snyder, James Elvin
Stapler, Audre Leopold
Sullivan, Charles Peter
Sullivan, Clement O.

Thomas, Abraham Fifield
Thompson, Alvin
Thompson, William John
Tir, Morris
Townsend, George
Waddington, Algernon H.
Walters, Inez Rouse
Weishew, Lewis Jerome
Whitaker, Ben Tallman
Wieneke, Clarence F.
Wilkinson, Barclay
Wyneken, Henry Otto

OUTSIDE CHICAGO IN ILLINOIS

Brandes, Harry August, Granite City
Chase, Martin Rist, Toulon
Connor, Arthur B., Wheaton
Crouch, Warner Latta, Belle Prairie
Eddington, Murtell M., Springerton
Finch, Rollae Dean, Flora
Fisher, Hart Elles, Joliet
Flexer, Howard Norton, Joliet
Flynn, Leo Howard, Bloomington
Gambill, John Milton, Johnson City
Gerow, Katherine, Evanston
Hirschle, Harry Grillith, Springfield.
Kareh, Arthur W., Blue Island
Krohn, John William, Joliet

Mutschmann, Louis F., E. St. Louis
Schiele, William Christopher, Joliet
Smith, Bert, Mt. Carmel
Smith, Joseph Henry, Sherman
Sorgatz, George Frederiek, Springfield
Stevens, Walter S., Hulls
Tilton, Welcome Blaine, Freeport
Trippel, Edward, New Baden
Vaughan, Willard Robert, LaSalle
Wesenberg, William Robert, America
Williamson, Arthur R., Pontiac
Wohler, Paul Reinhold, Springfield

OUTSIDE OF ILLINOIS

Allgover, Henry A., Wichita Falls, Tex.
Barker, Charles B., New Albany, Ind.
Bowman, Galen Ford, Toledo, Ohio
Bucher, Claude Earl, Milwaukee, Wis.
Caddick, Earl, Cherokee, Ia.
Carlson, Mabel Rosina, San Francisco, Cal.
Channon, Benjamin, Minneapolis, Minn.
Chatel, Arthur Narcisse, Kearsarge, Mich.
Cox, A. Milton, Bismarek, N. Dak.
Empson, Roy George, Detroit, Mich.
Engesather, John A. D., Brocket, N. D.
Etherton, Monte, St. Louis, Mo.
Henry, James Clayton, New York City
Kelliher, John Leo, Milwaukee, Wis.
Klamt, Anton Carl, Howells, Nebr.
Knapp, Arthur LeRoy, Michigan City, Ind.
Kratzenstein, Louis Robert, Escanaba, Mich.
Lanerman, Archibald Wm., West Bend, Wis.
Laurin, Vilda Samuel, Buckingham, Ontario, Can.
Lutz, Gustavo A., Rochester, New York

Marks, Walker Roscoe, Vinita, Okla.
Michael, Herman Charles, St. Louis, Mo.
Noe, Philip R., Oshkosh, Wis.
Pearce, Albert Joseph B., Piteairn, Pa.
Porter, James Arthur, Hedrick, Ia.
Rabenneck, Paul Benjamin, Cleveland, Ohio
Reid, Wells Cook, St. Louis, Mo.
Riordan, John Frances, St. Louis, Mo.
Rowland, Delta Eulilla, Sunnyside, Wash.
Shumaker, Charles Henry, St. Louis, Mo.
Smith, Charles Henry, Portland, Ore.
Smith, William Wallis, St. Louis, Mo.
Thie, Otto William, St. Louis, Mo.
Torrance, Fred Emerson, Winfield, Kan.
Wedel, Frank LeRoy, Vincennes, Ind.
White, Sarah Marguerite, Battle Creek, Mich.
Wilson, James Lee, New York City
Woodward, Frank Albert, Great Falls, Mont.

MEMBERSHIP OF THE CHICAGO MEDICAL SOCIETY FOR TWELVE YEARS
SINCE 1901

INCLUDES COOK AND DUPAGE COUNTIES

Year 1901—President, Christian Fenger. Nominal 940.

In good standing. No report, old constitution and no contribution to State Society.

Year 1902—President, W. A. Evans. Nominal, 1,050.

In good standing. No report, old constitution and no contribution to State Society.

Year 1903—President, R. B. Preble. Nominal, 1,400.

In good standing. No report, old constitution and no contribution to State Society.

Year 1904—President, J. B. Murphy. Nominal, 1,512.

In good standing. First year of new constitution. Dues of members to state society not paid until following year.

Year 1905—President, C. S. Bacon. Nominal, 1,710.

In good standing according to roster of society, 1,521. Paid State Society dues of 1,267 members for 1904, \$1,900.50.

Year 1906—President, C. S. Bacon. Nominal, 1,928.

In good standing according to roster of Society, 1,338. Paid State Society dues of 1,214 members for 1905, \$1,821.

Year 1907—President, George E. Webster. Nominal, 2,107.

In good standing according to roster of Society, 1,570. Paid State Society dues of 1,281 members for 1906, \$1,921.50.

Year 1908—President, F. B. Favill. Nominal, 2,259.

In good standing according to roster of Society. Paid State Society dues of 1,815 members for 1907, \$4,538.38.

Year 1909—President, A. C. Cotton. Nominal, 2,011.

In good standing according to roster of Society, 1,891. Paid State Society dues of 1,950 members for 1908, \$4,895.

Year 1910—President, John A. Robison. Nominal, 2,199.

In good standing according to roster of society, 1,645. Paid State Society dues of 1,931 members for 1909, \$4,827.50.

Year 1911—President, A. H. Ferguson. Nominal, 2,400.

In good standing according to roster of society, 1,617. Paid State Society dues of 2,191 members for 1910, \$5,487.50.

Year 1912—President, Jos. M. Patton. Nominal, 2,193.

In good standing according to roster of society, 1,693. Paid State Society dues of 2,305 members for 1911, \$5,762.50.

A MEDICAL DIPLOMAT FAILS IN DIPLOMACY

Dr. Edward Denison, 17 West Garfield Boulevard, Chicago, a South Side practitioner, who seems to have the luxury of a summer home on the banks of Bass Lake, Ind., is charged with the theft of automobiles, automobile accessories, motorcycles, etc., which has brought him into trouble. Dr. Denison has had a distinguished diplomatic career, having received his first diploma from the Northwestern Medical College, St. Joseph, Mo., in 1892. In 1893 he obtained a diploma of the St. Louis College of Physicians and Surgeons, St. Louis. In 1895 he received a diploma from the Illinois Medical College of Chicago.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION

The thirty-eighth annual meeting of this association will be held at the Hotel Sherman, Chicago, October 22-24, under the presidency of Dr. Louis Frank, Louisville. The arrangements are in charge of the following committees:

Hugh T. Patrick, M.D., chairman; S. C. Stanton, M.D., secretary; and subcommittees with chairmen as follows: Finance, Harold N. Moyer, M.D.; Entertainment, D'Orsay Hecht, M.D.; Ladies, Mrs. Arthur R. Elliott; Reception, William L. Baum, M.D.; Exhibits, S. C. Stanton, M.D.; Clinics, A. J. Ochsner, M.D.; Transportation, J. Rawson Pennington, M.D.; Headquarters, Channing W. Barrett, M.D.; Registration, Ralph W. Webster, M.D.; Badges, William Fuller, M.D.; Hotels, Daniel N. Eisendrath, M.D.; Publicity, George F. Suker, M.D. and Pathologic and Sanitary Exhibits, Allen B. Kanavel, M.D.

MEDICAL SECTION

FIRST DAY, OCT. 22, 1912.—MORNING SESSION

- Stealy, J. H., Freeport, Ill., Sixteen Cases of Pernicious Anemia, with Particular Observations as to Etiology and Treatment.
 McCaskey, G. W., Fort Wayne, Ind., The Treatment of Arteriosclerosis.
 Stone, Willard J., Toledo, Ohio, The Resistance of Luetic Red-Cells to Cobra Venom Hemolysis, and the Possible Value of the Reaction.
 Scherck, Henry J., St. Louis, Mo., The Leutin Test of Noguchi—Its Value in Comparison with the Wassermann Reaction.
 Zimmerman, B. F., Louisville, Ky., Phylacogens, Unique Therapeutic Results, Case Reports.
 Pottenger, F. M., Monrovia, Cal., Unmistakable Clinical Proofs of the Therapeutic Value of Tuberculin.

AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections

Obstetrical Symposium

- Peterson, Reuben, Ann Arbor, Mich., Caesarean Section.
 Davis, Asa B., New York, N. Y., Caesarean Section.
 Schwartz, Henry, St. Louis, Mo., The Management of Pregnancy and Labor in the Presence of Pelvic Contraction.
 Discussion opened by E. Gustave Zinke, Cincinnati, Ohio, and Lewis S. McMurtry, Louisville, Ky.

SECOND DAY, OCT. 23, 1912.—MORNING SESSION

- Witherspoon, J. A., Nashville, Tenn., Cardiovascular Changes Produced by Focal Infections.
 Geier, Otto P., Cincinnati, Ohio, Preventive Medicine and Social Service Work in a Municipality.
 Hummel, E. M., New Orleans, La., The Prevalence of Asthenic Disorders of the Nervous System in Warm Climates.
 Dewey, Richard, Wauwatosa, Wis., Comparison of Predominant Forms of Mental Disorders in Admissions of Two Five Year Periods, 1907-12—1895-1900.
 Reed, Charles F., Kankakee State Hospital, Hospital, Ill., Modern Conceptions of Paranoia.
 Ravogli, A., Cincinnati, O., Eczema As Seen By the General Practitioner.

SECOND DAY, OCT. 23, 1912.—AFTERNOON SESSION
Joint Meeting of the Medical and Surgical Sections

Symposium.—Nervous Diseases and Surgery

- Norbury, Frank P., Springfield, Ill., Psychasthenia.
Frazier, Charles H., Philadelphia, Pa., Considerations of Procedures Adapted to the Exposure of Structures at the Base of the Skull.
Hoppe, Herman H., Cincinnati, O., The Diagnosis of Brain Tumors.
Stucky, J. A., Lexington, Ky., Report of Three Cases of Abscess of the Anterior Portion of the Frontal Lobe of the Brain.
Elsberg, Charles A., New York, N. Y., Experiences in Spinal Surgery; Observations Upon 60 Laminectomies for Spinal Disease, with Lantern Slide Demonstration.

SECOND DAY, OCT. 23, 1912.—EVENING SESSION

Joint Meeting with the Chicago Medical Society

- Address by the President, Frank, Louis, Louisville, Ky.
Address in Medicine, Stockton, Charles G., Buffalo, N. Y., The Stomach from the Standpoint of the General Practitioner, the Specialist and the Surgeon.
Address in Surgery, Crile, George W., Cleveland, Ohio, Biologic Interpretation of Abdominal Pain and its Surgical Relation.

THIRD DAY, OCT. 24, 1912.—MORNING SESSION

- Bass, C. C., New Orleans, La., A Stereopticon Demonstration of the Artificial Cultivation of Malarial Plasmodia.
Solomon, Leon L., Louisville, Ky., Hormonal, Its Therapeutic Value.
Trawick, John D., Louisville, Ky., Congenital Ptosis in Children.
Boggess, Walter F., Louisville, Ky., Paper.
Kelly, Harris, Colorado Springs, Colo., Paper.
Griffith, J. D., Kansas City, Mo., Paper.

THIRD DAY, OCT. 24, 1912.—AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections

Symposium.—Intestinal Surgery

- Roberts, H. H., Lexington, Ky., Gastric and Intestinal Neoplasms. (Illustrated with Lantern Slides.)
Morris, Robert T., New York, N. Y., Notes Relative to Upper Abdominal Adhesions.
Cole, Lewis Gregory, New York, N. Y., Diagnosis of Lesions in the Right Hypochondrium. Cinematograph Demonstration.
Bloodgood, John C., Baltimore, Md., Indications for and the Technic of Resection of the Colon, with Lantern Slide Demonstration.
Jackson, Jabez N., Kansas City, Mo., Membranous Periccolitis, and Allied Conditions of the Ileocecal Region.
Selby, J. H., Rochester, Minn., Congenital Failure of the Colon to Rotate. Lantern Slide Demonstration.
Nicholson, C. M., St. Louis, Mo., The Urachus as a Factor in Intestinal Obstruction.

SURGICAL SECTION

FIRST DAY, OCT. 22, 1912.—MORNING SESSION

Symposium.—Genito-Urinary

- Harpster, C. M., Toledo, Ohio, International Congress on Syphilis, held at Rome, April, 1912.
Wheeler, Carl Lewis, Lexington, Ky., The Urological Aspect of the Microscope as a Localizer of Disease.
Smith, E. O., Cincinnati, Ohio, Symptomatology and Pathology of Prostatic Hypertrophy.
Lewis, Bransford, St. Louis, Mo., Physical Examination and the Role of the Cystoscope in Prostatic Hypertrophy.
Cabot, Hugh, Boston, Mass., Operative Treatment of Prostatic Hypertrophy.
Wishard, W. N., Indianapolis, Ind., Pre- and Post-Operative Treatment of Prostatic Hypertrophy.

AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections
Obstetrical Symposium

OCT. 23, 1912.—MORNING SESSION

Carstens, J. H., Detroit, Mich., A Third Cesarean Section on the Same Woman.
 Grant, H. H., Louisville, Ky., Wounds of the Thoracic Duct with Leakage.
 Cordier, A. H., Kansas City, Mo., Paper.
 Black, Carl E., Jacksonville, Ill., Paper.
 Reed, Charles A. L., Cincinnati, Ohio, Paper.

SECOND DAY, OCT. 23, 1912.—AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections
Symposium—Nervous Diseases and Surgery

OCT. 23, 1912.—EVENING SESSION

Joint Meeting with the Chicago Medical Society

THIRD DAY, OCT. 24, 1912.—MORNING SESSION

Giffin, Herbert Z., Rochester, Minn., Clinical Findings in Operable Splenomegaly.
 Brown, George V. I., Milwaukee, Wis., Cleft Palate Operations.
 Haines, W. D., Cincinnati, Ohio, The Surgical Importance and Treatment of Hyperthyroidism.
 Haggard, W. D., Nashville, Tenn., Paper.
 Deaver, John B., Philadelphia, Pa., Pancreatic Lymphangitis and Chronic Pancreatitis.

OCT. 24, 1912.—AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections
Symposium—Intestinal Surgery

CLINICS

The following is the preliminary schedule of clinics to be held during the week before and the two days following the meeting:

MONDAY, OCT. 14

Surgery—

Dr. Carl Beck, North Chicago Hospital 9-11 a. m.
 Dr. Arthur D. Bevan, Presbyterian Hospital 9 a. m. to 1 p. m.
 Dr. S. Dahl, Norwegian Deaconess Hospital 9-11 a. m.
 Dr. T. A. Davis, West Side Hospital..... 1-3 p. m.
 Dr. A. Goldspohn, Ev. Deaconess Hospital 9 a. m. to 12 m.
 Dr. M. L. Harris, Alexian Brothers Hospital..... 8 a. m.
 Dr. M. L. Harris, Chicago Polyclinic Hospital..... 11 a. m.
 Dr. Norman Kerr, Chicago Polyclinic Hospital..... 11 a. m. to 12 m.
 Dr. Paul F. Morf, Chicago Polyclinic Hospital 3-4 p. m.
 Dr. John B. Murphy, Mercy Hospital..... 10 a. m. to 1 p. m.
 Dr. A. J. Ochsner, Augustana Hospital..... 8 a. m. to 12 m.
 Dr. John L. Porter, St. Luke's Hospital..... 8:30-11 a. m.
 Dr. E. W. Ryerson, Children's Memorial Hospital..... 3:30-6 p. m.
 Dr. Carl Wagner, St. Joseph's Hospital..... 10 a. m.
 Dr. Gilbert H. Wynekoop, Lake View Hospital..... 10 a. m. to 12 m.

Medicine—

Dr. Frank Billings, Presbyterian Hospital..... 9-11 a. m.
 Dr. Frederick Tice, Cook County Hospital..... 10 a. m. to 12 m.

Gynecology—

Dr. Henry Banga, Chicago Polyclinic Hospital..... 10-11 a. m.
 Dr. Philip S. Doane, St. Joseph's Hospital..... 10:30 a. m. to 12 m.
 Dr. Robert T. Gillmore, Wesley Hospital..... 2-4 p. m.

Pediatrics—

Dr. Isaac A. Abt., Michael Reese Hospital.....8-9 a. m.
 Dr. Grabow, Chicago Polielinie Hospital.....3-4 p. m.

Eye, Ear, Nose and Throat—

Dr. C. Robertson, Chicago Polielinie Hospital.....2-5 p. m.
 Dr. O. Tydings, Chicago Eye, Ear, Nose & Throat Hospital... 3 p. m.
 Dr. Wm. H. Wilder, Rush Medical College.

Genito-Urinary—

Dr. Louis Schmidt, Chicago Polielinie Hospital.....4-5 p. m.
 Dr. Kretschmer, Chicago Polielinie Hospital.....4-5 p. m.

Dermatology—

Dr. William Allen Pusey, Cook County Hospital.....2-3 p. m.

Neurology—

Dr. D'Orsay Hecht, Northwestern University Medical School...3 p. m.

TUESDAY, OCT. 15

Surgery—

Dr. Carl Beck, North Chicago Hospital.....9-11 a. m.
 Dr. D. N. Eisendrath, Michael Reese Hospital.....9-11 a. m.
 Dr. M. L. Harris, Alexian Brothers Hospital.....8 a. m.
 Dr. A. E. Halstead, St. Luke's Hospital.....8-10 a. m.
 Dr. D. D. Lewis, Presbyterian Hospital.....11 a. m. to 1 p. m.
 Dr. L. L. McArthur, Michael Reese Hospital9-11 a. m.
 Dr. N. M. Percy, Augustana Hospital.....8-11 a. m.
 Dr. John L. Porter, West Side Hospital10 a. m. to 12 m.
 Dr. W. E. Schroeder, Wesley Hospital.....8-10 a. m.
 Dr. Carl Wagner, Columbus Hospital.....10 a. m.
 Dr. C. I. Wynekoop, Lake View Hospital.....10 a. m. to 12 m.

Medicine—

Dr. James B. Herrick, Presbyterian Hospital9-11 a. m.
 Dr. E. C. Seufert, Cook County Hospital.....11 a. m. to 1 p. m.
 Dr. Arthur R. Elliott, Post-Graduate Hospital.....3 p. m.
 Dr. Goldsmith, Wesley Hospital.....10-11 a. m.
 Dr. S. R. Pietrowicz, Cook County Hospital.....10 a. m. to 12 m.

Gynecology—

Dr. G. de Tarnowsky, Chicago Polielinie Hospital.....3-4 p. m.
 Dr. W. McI. Thompson, St. Joseph's Hospital.....11 a. m.
 Dr. A. B. Keyes, Chicago Polielinie Hospital.....3 p. m.

Eye, Ear, Nose and Throat—

Dr. Charles H. Beard, Illinois Charitable Eye and Ear
 Infirmary 1:30-3:30 p. m.
 Dr. Otto Freer, Chicago Polielinie Hospital.....4-5 p. m.
 Dr. Norval H. Pierce, St. Luke's Hospital.....2:30 p. m.
 Dr. John L. Porter, West Side Hospital.....10 a. m. to 12 m.
 Dr. John Edwin Rhodes, Rush Medical College.....2-4 p. m.
 Dr. Geo. F. Suker, Post-Graduate Hospital.....9 a. m.

Rectal Diseases—

Dr. J. R. Pennington, Chicago Polielinie Hospital.....2-3 p. m.

WEDNESDAY, OCTOBER 16

Surgery—

Dr. Carl Beck, Cook County Hospital1-4 p. m.
 Dr. Charles Davison, University Hospital1-3 p. m.
 Drs. W. M. Harsha and William Fuller, West Side Hospital.1-3 p. m.
 Dr. M. L. Harris, Alexian Brothers' Hospital.....8 a. m.
 Dr. John B. Murphy, Mercy Hospital.....8:30 a. m. to 1 p. m.
 Dr. A. J. Ochsner, Augustana Hospital.....8 a. m. to 12 m.
 Dr. John L. Porter, Home for Crippled Children
 Dr. E. W. Ryerson, Children's Memorial Hospital.....3:30-6 p. m.

Surgery, Continued—

Dr. A. J. Schoenberg, Ev. Deaconess Hospital.....8 a. m. to 12 m.
 Dr. Carl Wagner, St. Joseph's Hospital.....10 a. m.
 Dr. Gilbert Wynekoop, Lake View Hospital.....10 a. m. to 12 m.

Medicine—

Dr. Dyche, Wesley Hospital.....10-11 a. m.
 Dr. Osgood, Wesley Hospital.....9-10 a. m.

Gynecology—

Dr. J. Clarence Webster, Presbyterian Hospital ..11 a. m. to 1 p. m.

Eye, Ear, Nose and Throat—

Dr. J. Holinger, St. Joseph's Hospital.....11 a. m.
 Dr. Fred Menge, Wesley Hospital.....9-10 a. m.
 Dr. Norval H. Pierce, Illinois Eye and Ear Infirmary.....2:30 p. m.
 Dr. O. Tydings, Chicago Eye, Ear, Nose and Throat Hospital ..2 p. m.
 Dr. Geo. F. Suker, Post-Graduate Hospital.....2:30-5 p. m.

Pediatrics—

Dr. Isaac A. Abt, Michael Reese Hospital.....8-9 a. m.
 Dr. John L. Porter, Home for Crippled Children.

Genito-Urinary—

Drs. Louis Schmidt and Kretschmer, Chicago Polyclinic....4-5 p. m.

THURSDAY, OCTOBER 17

Surgery—

Dr. Carl Beck, North Chicago Hospital.....9-11 a. m.
 Dr. F. A. Besley, Wesley Hospital.....5-6 p. m.
 Dr. Arthur D. Bevan, Presbyterian Hospital.....9 a. m. to 1 p. m.
 Dr. A. Goldspohn, Ev. Deaconess Hospital.....9 a. m. to 12 m.
 Dr. M. L. Harris, Alexian Brothers Hospital.....8 a. m.
 Dr. M. L. Harris, Polyclinic Hospital.....11 a. m.
 Dr. A. E. Halstead, St. Luke's Hospital.....8-10 a. m.
 Dr. A. B. Keyes, Cook County Hospital.....3 p. m.
 Dr. John B. Murphy, Mercy Hospital.....10 a. m. to 12 m.
 Dr. N. M. Percy, Augustana Hospital.....8-11 a. m.
 Dr. John L. Porter, St. Luke's Hospital.....8:30-11 a. m.
 Dr. Richter, Wesley Hospital.....4-6 p. m.
 Dr. E. W. Ryerson, Home for Crippled Children.....2-5 p. m.
 Dr. D. A. K. Steele, University Hospital.....1-3 p. m.
 Dr. Alex. C. Wiener, West Side Hospital.....11 a. m. to 1 p. m.
 Dr. Carl Wagner, St. Joseph's Hospital.....10 a. m.
 Dr. C. I. Wynekoop, Lake View Hospital.....10 a. m. to 12 m.

Medicine—

Dr. Frank Billings, Presbyterian Hospital.....9-11 a. m.

Gynecology—

Dr. Henry Banga, Chicago Polyclinic Hospital.....10-11 a. m.
 Dr. Philip S. Doane, St. Joseph's Hospital....10:30 a. m. to 12 m.
 Dr. Robert T. Gillmore, Wesley Hospital.....2-4 p. m.
 Dr. Thomas J. Watkins, Wesley Hospital.....9 a. m.

Eye, Ear, Nose and Throat—

Dr. C. M. Robertson, Chicago Polyclinic Hospital.....2-5 p. m.
 Dr. O. Tydings, Chicago Eye, Ear, Nose and Throat Hospital..3 p. m.
 Dr. Wm. H. Wilder, Illinois Eye & Ear Infirmary
 Drs. Casey A. Wood and Frank Allport, St. Luke's Hospital..2-4 p. m.
 Dr. Thomas A. Woodruff, St. Luke's Hospital.....2-4 p. m.

Rectal Diseases—

Dr. J. R. Pennington, Chicago Polyclinic Hospital.....2-3 p. m.

Pediatrics—

Dr. Grabow, Chicago Polyclinic Hospital.....3-4 p. m.

FRIDAY, OCTOBER 18

Surgery—

Dr. Carl Beck, North Chicago Hospital.....	9-11 a. m.
Dr. Edward M. Brown, West Side Hospital.....	1-3 p. m.
Dr. D. N. Eisendrath, Michael Reese Hospital.....	9 a. m.
Dr. M. L. Harris, Alexian Brothers Hospital.....	8 a. m.
Dr. Allen B. Kanavel, Wesley Hospital.....	4 p. m.
Dr. L. L. McArthur, Michael Reese Hospital.....	9-11 a. m.
Dr. A. J. Ochsner, Augustana Hospital.....	8 a. m. to 12 m.
Dr. John L. Porter, St. Luke's Hospital.....	8:30-11 a. m.
Dr. E. W. Ryerson, Chicago Polielinie Hospital	1-2 p. m.
Dr. W. E. Schroeder, Wesley Hospital.....	8-10 a. m.
Dr. Carl Wagner, Columbus Hospital	10 a. m.
Dr. Gilbert H. Wynekoop, Lake View Hospital....	10 a. m. to 12 m.

Medicine—

Dr. James B. Herrick, Presbyterian Hospital.....	9-11 a. m.
Dr. Arthur R. Elliott, Wesley Hospital.....	8-10 a. m.
Dr. Arthur R. Elliott, Post-Graduate Hospital.....	3 p. m.
Dr. S. R. Pietrowicz, Cook County Hospital.....	10 a. m. to 12 m.

Gynecology—

Dr. G. de Tarnowsky, Chicago Polielinie Hospital.....	3-4 p. m.
Dr. A. B. Keyes, Chicago Polielinie Hospital.....	3 p. m.
Dr. W. McI. Thompson, St. Joseph's Hospital.....	11 a. m.

Eye, Ear, Nose and Throat—

Dr. Otto Freer, Chicago Polielinie Hospital.....	4-5 p. m.
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Genito-Urinary Diseases—

Dr. Wm. T. Belfield, Rush Medical College.	
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Neurology—

Dr. A. H. Heym, Cook County Hospital.....	9-11 a. m.
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SATURDAY, OCTOBER 19

Surgery—

Dr. Carl Beck, North Chicago Hospital.....	9-11 a. m.
Dr. Arthur D. Bevan, Presbyterian Hospital.....	9 a. m. to 12 m.
Drs. G. W. Green and Bussay, Ravenswood Hospital	8 a. m.
Dr. M. L. Harris, Alexian Brothers' Hospital.....	8 a. m.
Dr. John B. Murphy, Mercy Hospital.....	9 a. m. to 1 p. m.
Dr. N. M. Percy, Augustana Hospital.....	8 a. m. to 12 m.
Dr. Carl Wagner, St. Joseph's Hospital.....	10 a. m.
Dr. C. I. Wynekoop, Lake View Hospital	10 a. m. to 12 m.

Medicine—

Dr. Joseph M. Patton, Cook County Hospital.....	9-10 a. m.
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Gynecology—

Dr. J. Clarence Webster, Presbyterian Hospital....	11 a. m. to 1 p. m.
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Eye, Ear, Nose and Throat—

Dr. J. Holinger, St. Joseph's Hospital.....	11 a. m.
Dr. Norval H. Pierce, Illinois Eye and Ear Infirmary....	2:30 p. m.
Dr. O. Tydings, Chicago Eye, Ear, Nose & Throat Hospital..	2 p. m.
Dr. Geo. F. Suker, Post-Graduate Hospital.....	2:30-5 p. m.

Pediatrics—

Dr. Isaac A. Abt, Michael Reese Hospital.....	8-9 a. m.
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Neurology—

Dr. D'Orsay Hecht, N. W. University Medical School.....	2 p. m.
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Surgery—

FRIDAY, OCTOBER 25

Dr. Carl Beck, North Chicago Hospital.....	9-11 a. m.
Dr. Edward M. Brown, West Side Hospital.....	1-3 p. m.
Dr. D. N. Eisendrath, Michael Reese Hospital.....	9 a. m.
Dr. A. B. Kanavel, Wesley Hospital.....	4-5 p. m.
Dr. A. J. Ochsner, Augustana Hospital.....	8 a. m. to 12 m.
Dr. John L. Porter, St. Luke's Hospital.....	8:30-11 a. m.
Dr. E. W. Ryerson, Chicago Polyclinic Hospital.....	1-2 p. m.
Dr. W. E. Schroeder, Wesley Hospital.....	8-10 a. m.
Dr. Carl Wagner, Columbus Hospital.....	10 a. m.
Dr. Gilbert H. Wynkoop, Lake View Hospital....	10 a. m. to 12 m.

Medicine—

Dr. James B. Herriek, Presbyterian Hospital.....	9-11 a. m.
Dr. H. A. Klein, Alexian Brothers' Hospital.....	9-11 a. m.
Dr. Fenton B. Turk, Post-Graduate Hospital.....	2-3 p. m.
Dr. S. R. Pietrowicz, Cook County Hospital.....	10 a. m. to 12 m.
Dr. Arthur R. Elliott, Post-Graduate Hospital.....	3 p. m.

Gynecology—

Dr. A. B. Keyes, Chicago Polyclinic Hospital.....	3 p. m.
Dr. W. McI. Thompson, St. Joseph's Hospital.....	11 a. m.
Dr. Thomas J. Watkins, Wesley Hospital.....	9 a. m.

Eye, Ear, Nose and Throat—

Dr. Otto Freer, Chicago Polyclinic Hospital.....	4-5 p. m.
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Genito-Urinary Diseases—

Dr. Wm. T. Belfield, Rush Medical College.	
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Neurology—

Dr. D'Orsay Hecht, Michael Reese Hospital.....	2 p. m.
Dr. A. Heym, Cook County Hospital	9-11 a. m.

Surgery—

SATURDAY, OCTOBER 26

Dr. Carl Beck, North Chicago Hospital.....	9-11 a. m.
Dr. Arthur D. Bevan, Presbyterian Hospital	9 a. m. to 12 m.
Dr. John B. Murphy, Mercy Hospital.....	9 a. m. to 1 p. m.
Dr. N. M. Percy, Augustana Hospital.....	8 a. m. to 12 m.
Dr. John L. Porter, St. Luke's Hospital.....	8:30-11 a. m.
Dr. Carl Wagner, St. Joseph's Hospital.....	10 a. m.
Dr. C. I. Wynkoop, Lake View Hospital.....	10 a. m. to 12 m.

Medicine—

Dr. Joseph M. Patton, Cook County Hospital.....	9-10 a. m.
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Gynecology—

Dr. J. Clarence Webster, Presbyterian Hospital..	11 a. m. to 1 p. m.
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Eye, Ear, Nose and Throat—

Dr. J. H. Holinger, St. Joseph's Hospital.....	11 a. m.
Dr. Norval H. Pierce, Illinois Eye and Ear Infirmary....	2:30 p. m.
Dr. O. Tydings, Chicago Eye, Ear, Nose and Throat Hospital..	2 p. m.
Dr. Geo. F. Suker, Post-Graduate Hospital.....	2:30 p. m.

Pediatrics—

Dr. Isaac A. Abt, Michael Reese Hospital.....	8-9 a. m.
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The following institutions will have clinics every day, which are open to the members of the association during the hours indicated below:

Chicago Eye, Ear, Nose and Throat Hospital.....	9 a. m. to 6 p. m.
Illinois Charitable Eye and Ear Infirmary	2-4 p. m.
West Side Hospital	9 a. m. to 4 p. m.

Chicago Policlinic Hospital	9 a. m. to 6 p. m.
Augustana Hospital	8 a. m. to 12 m.
Norwegian Deaconess Hospital.....	9-11 a. m.
St. Mary's Nazareth Hospital	8-11 a. m.

Dr. Patrick S. O'Donnell will give daily demonstrations in *x-ray* work at 1209 Heyworth Building, from 4 to 5 p. m.

The Chicago Maternity Hospital will give daily demonstrations in artificial feeding of infants and obstetrics from 10 a. m. to 1 p. m.

In the Children's Memorial Hospital there will be daily demonstrations of the treatment of diseases of children, infant-feeding and metabolism, from 2 to 5 p. m.

Dr. Joseph B. DeLee will send notice to headquarters should he have obstetric material for a clinic at any time in the Chicago Lying-In Hospital.

Physicians interested in the treatment of tuberculosis are invited to visit the Edwards Sanatorium, Naperville, Ill., which is under the direction of Dr. Theodore Sachs. Sunday train from Union station at 11 a. m., returning to Chicago at 6 p. m.

Special Article

FRANKLIN R. PITNER, M.D.

In view of the one hundredth anniversary of Dr. Franklin R. Pitner, which occurs October 10th, and in response to a request of the editor of *THE JOURNAL*, I take pleasure in presenting a brief sketch of my venerable uncle. Dr. Pitner was the fourth son of Michael and Katherin (Rubel) Pitner, and was born in Wilson County, Tenn., near the Hermitage. He remembers seeing General Jackson several times at their home. His father enlisted in the war of 1812 and served under General Jackson at the battle of New Orleans.

The father of Michael Pitner was born in Germany, at Coblenz, on the Rhine, and with two brothers came to this country a few years before the Revolutionary War. They all served in the Continental Army throughout the war. The grandfather resided in Rockingham County, Virginia. Michael, soon after his marriage, removed first to Knoxville, Tenn., where his two oldest sons were born; afterwards went to Wilson County. He was the father of ten children, all of whom lived to advanced life.

Dr. Pitner came to Illinois in 1830, with his brother Montgomery, who had come five years prior, and entered land two miles east of Jacksonville. He attended McKendree College, and in 1832 began the study of medicine with Dr. Davenport at Salem, Ill. He attended medical lectures at Transylvania University, Lexington, Ky. After completing his medical course he located for practice in Maysville, Ill. (now Clay City). He was married in 1840 to Miss Sarah T. Ridgeway, granddaughter of Jacob Ridgeway, one of the leading merchants of Philadelphia.

Dr. Pitner was elected to the Illinois Legislature in 1844. After his term expired he settled in Jerseyville, Ill., where he practiced until 1850, when he joined a party of gold seekers and crossed the plains to California. The party was stricken with cholera en route. After exhausting work in caring for the many sick, the doctor himself became a victim to the dread disease. He prescribed for himself, and through the ministrations of a faithful friend he recovered and was able to look after others on the way.



FRANKLIN R. PITNER, M.D.

He remained in California two years. Returning he removed to his old home in Maysville, where he has resided ever since, excepting three years in Jacksonville, where the family went while the daughter (now Mrs. G. H. Huntley, Waterloo, Iowa) attended the woman's college. During this time he was associated in practice with the writer. Soon after returning to his home in Clay City he was called to mourn the loss of his devoted wife.

Dr. Pitner continued in the practice of medicine until he was 90 years of age, retaining remarkable vigor, both physical and mental. At that time he retired from active work and made a long visit to his son, John Lloyd, pastor of one of the principal Methodist churches in Los Angeles. Returning to Clay City he has since made his home with his youngest son, Charles, who, with his wife, have most faithfully and tenderly cared for him. He has had few of the infirmities of old age. But last January he fell and fractured the neck of the femur, which has not united and he is confined to his bed; yet he suffers but little and never complains. He has been a successful physician holding a good practice for a remarkably long period. Throughout his long career he has exhibited unusual activity and energy. He was always ready for the hard long trips which he was so frequently called upon to make, serving cheerfully all who sought his care.

Dr. Pitner has been for eighty-five years a devout active member of the Methodist church. At first pro-slavery, he became strongly anti-slavery and anti-saloon. For thirty years he used tobacco freely, then discarded it. He has been a man of strong conviction and outspoken for the right as he saw it, but considerate of others; maintaining the respect and friendship of his neighbors. He was always cheerful and genial, carrying sunshine and hope into the sick-room, imparting courage to the despondent. Dr. Pitner was especially happy in his home life, his wife possessing rare qualities with gentle spirit and strong character, and his children a constant joy to him. Two of his sons are very efficient ministers, another son a prominent dentist, and for several years president of the state board of dental examiners, and the other son a teacher, but now in business in Clay City.

Dr. Pitner was president several years of a district medical society in his section, and has always maintained honorable and cordial relations with his colleagues. He has lived long and lived well, and has honored his profession, which desires to express its appreciation and to honor him in his old age.

T. J. PITNER.

DR. FRANKLIN R. PITNER

As we go to press word is received of Dr. Pitner's death which occurred Sept. 29, twelve days before his one hundredth birthday.

Correspondence

UNREGISTERED PRACTITIONERS

Sept. 24, 1912.

To the Editor:—I wish to have your kind information in regard to a physician who located in our own town some four years ago, and who has been very active. He is, as the laity call it, a good mixer, but not so agreeable in the medical fraternity, and a few of the members have suffered from his unprofessional treatment. However, none of us have doubted his right to practice through the proper registration.

I have received from our efficient (?) state board of health secretary the Official Register of Legally Qualified Physicians, and that is the correct record as I understand it, kept at the state board's office. However, I cannot find this doctor's name; I then tried to find his name on record in the County Register, and cannot find him there.

Now, his name appears in our daily papers oftener than need be; his name is also in the A. M. A. Directory, and it appears to me that something may be wrong in this right of practice assumed by this doctor.

I will appreciate an early reply with information as to what plans to follow in this case.

Faternally yours,

Pres. of the ——— County Med. Society.

AVOIDS DOUBLE-HEADER

To the Editor:—A lady residing in Moline came to Peoria recently to be confined. She stated that within a radius of three blocks during the past four months nine pairs of twins had been born.

M. S. MARCY.

Did she leave in time?—ED.

6 WADIA A. BUILDING

GOVERNMENT GATE ROAD, PAREL, BOMBAY, INDIA.

Illinois State Medical Society, U. S. A.

Sirs:—With reference to your advertisement in *New York Medical Journal*, I shall feel highly obliged to you if you will kindly forward to my above address a copy of your complete Syllabus with the list of necessary text-books.

Will you please let me know the lowest term for L.M.S. or M.B.,B.L. degree of any University who can take the examination in Bombay.

Thanking you in advance,

Yours faithfully,

NASSARWARYE DEHUNJELIHROY.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The annual outing of the Adams County Medical Society was held Friday, August 23, at Camp Point, Ill. The attendance was very large and included besides the doctors many of their wives and friends, Miss Burt, the superintendent of Blessing Hospital, and Dr. Litchfield, physician at the Soldiers' Home, Quincy.

The important event of the day was the fried-chicken dinner. Everyone did justice to the good things prepared, and after the long drive the appetites needed no stimulation. The afternoon was taken up with the ball game, music, and a lecture by Euclid B. Rogers, of Springfield, Ill., on "The End of Education Not a Living But a Life." This was one of the most pleasant and successful outings held by the society for several years. Much praise is given to the committee who had charge of the arrangements, Drs. Grimes, Spence, A. D. Bates and J. H. Pittman.

September Meeting

The regular meeting of the Adams County Medical Society was held Monday, September 9, at the Chamber of Commerce rooms. President Pittman called the meeting to order at 11 a. m. The attendance was very large. Besides the members the society entertained five visiting physicians, namely: Dr. Alexander R. Craig, secretary American Medical Association, Chicago; Dr. Pence, member of Council, Chicago; Dr. C. E. Black, member of Council, Jacksonville; Dr. Percy, member of Council, Galesburg; Dr. E. W. Weis, secretary of Illinois State Medical Society, Ottawa.

After the reading of the minutes Dr. John Koch made report on three medico-legal cases. The first was the case of Mrs. Hermismeyer, who is practicing in Quincy both as midwife and physician and has not a license for either. The state lost the case, but it has been appealed to the circuit court, and in all probability the state will win.

The second, that of L. G. Brown, a chiropractic, who was practicing in Quincy. The state won after hearing the testimony of a number of witnesses.

The third, that of S. M. Wells, a medical expert with the LaVita Drug Company. The state also won this case.

Luncheon was enjoyed at the Hotel Quincy.

The afternoon was spent in discussing the Miller case. Each one of the visiting physicians expressed his views. The point for discussion was: "What are the Present Relations of the Adams County Medical Society to the State Society, and What Will the Future Relations Be?"

After many opinions had been voiced and the subject thoroughly discussed the following resolution was read and adopted:

Resolved, That the Adams County Medical Society under protest accepts the report of the Council declaring Dr. Miller a member, and at the same time expresses its disapproval of Dr. Miller and declares him an unwelcome member.

Before the meeting closed it was moved, seconded and carried that the president appoint a committee of five to bring charges against our new member, Dr. J. E. Miller. Accordingly the committee was appointed. Adjourned.

BOND AND FAYETTE COUNTIES

The Medical Societies of Bond and Fayette counties met at Mulberry Grove Thursday, September 12, and held a joint session and picnic at Hudson Park. The meeting was a pronounced success and already the two societies have passed a motion to hold another joint session in September next year.

At the morning session, Dr. H. S. Crossen, Professor of Gynecology of Washington University, St. Louis, read a paper on "Gynecological Surgery in Nervous Patients." At noon the ladies served a bounteous dinner. At the afternoon session Dr. C. W. Lillie of East St. Louis addressed the physicians on the subject of "Organization of Illegal Practice." Following his talk, Dr. George S. Rainey of Salem gave an address on "The Home Beautiful," which was very interesting. At the afternoon session also, Miss Bernice Hutchinson of Mulberry Grove and Miss Ruth Freeman of St. Elmo gave readings which were much appreciated. Wm. Ingram entertained the doctors with reading of "Good-bye Brother Watkins" in plantation dialect. Those present were: Drs. J. H. Gordon and family, D. R. Wilkins and family of Pocahontas; Wm. T. Easley and son Charles, Dr. J. C. Wilson and wife, Dr. A. M. Keith and wife, and Dr. E. S. Clark and daughter of Greenville; Dr. H. S. Crossen of St. Louis; Drs. C. W. Lillie and H. G. Staunton and Mrs. Laura Brown of E. St. Louis; Dr. O. C. Church and family of Woburn; Dr. G. S. Rainey of Salem; Drs. W. E. Rose, L. L. Morey, and A. L. T. Williams of Vandalia; Drs. C. H. Eldridge, E. B. Pribble and wife, W. J. Whitefort and wife and Miss Ruth Freeman of St. Elmo; Drs. J. S. Poindexter and family, E. A. Glasgow and wife, D. T. Brown and wife, W. B. Hutchinson and Miss Bernice; and twenty other friends.

COOK COUNTY

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

Regular Meeting, May 21, 1912

A regular meeting was held May 21, 1912, with the president, Dr. Joseph C. Beek, in the chair.

Dr. George Paull Marquis demonstrated a tonsil forceps with movable handles which was intended to facilitate the introduction of the snare over the forceps.

DISCUSSION

Dr. Good thought it might be impossible to pass the snare over the tonsils.

Dr. Beek stated that one does not need a forceps in passing the snare over the tonsil; that a solid ring facilitates the passing of the loop over the tonsil.

Dr. Marquis has never used the solid ring.

Dr. Fletcher likes a snare which is small and uses the tonsil forceps with the teeth close together.

PRESENTATION OF SPECIMENS SHOWING TOPOGRAPHY OF MIDDLE EAR

JOHN A. CAVANAUGH, M.D.

SOME CURABLE AFFECTIONS OF THE ACOUSTIC NERVE

ALFRED LEWY, M.D.

Dr. Alfred Lewy describes a group of cases showing lessened hearing and shortened bone conduction, and which recover after appropriate treatment. There was no loss of either high or low tone limits except when associated with tubal obstruction, as some of them were. These showed in addition to shortened bone conduction a slight loss of the lower tone limit and improvement on inflation. He believes these cases to be due to anemia, nerve depression and possibly autointoxication, and calls attention to the sparseness of the literature on this subject. Several cases are described in detail.

He also describes disturbances of the acoustic nerve due to various drug intoxications and the toxemias of the infectious and constitutional diseases. He suggests that study of these cases may lead to the prevention of some of the numerous incurable cases of nerve degeneration.

DISCUSSION

Dr. Geo. E. Shambaugh in discussion stated that the paper discusses one of the most difficult problems in connection with diagnosis of ear diseases. The diagnosis of an ear case is rarely a simple problem, yet we are usually able to work out a more or less positive diagnosis of the conditions that present themselves, especially those which come under the head of the ordinary text-book conditions. There are no doubt a great many conditions which involve the labyrinth only temporarily. It is not at all uncommon in severe cases of otitis media to detect evidences of labyrinth involvement, such as marked defect for the higher notes and severe tinnitus, conditions which often subside with the recovery of the otitis media. Occasionally there are left permanent changes in the labyrinth. It does not seem impossible that with the milder forms of otitis media there may also occasionally be an involvement of the labyrinth. This may explain the first case in those reported by Dr. Lewy. In cases where the diagnosis seems quite clear of typical labyrinth deafness of a moderate degree, we often find a distinct increase in the deafness during an ordinary head cold and yet a careful examination fails to discover any tangible evidence of a middle ear involvement. In most cases where hearing is below par the patients will state that their difficulty in hearing is increased by physical or mental fatigue as well as by climatic conditions. When a person's hearing is so much impaired that he must constantly remain on the alert any slight decrease in hearing, such as may be brought on by fatigue, etc., is quickly appreciated.

Dr. J. Holinger congratulated Dr. Lewy on his careful work. He thinks, however, that the doctor is a little too sanguine, as he attributes too much of the hard hearing to nerve deafness. As long as there is a distinct improvement after inflation he can only attribute that part of the hard hearing which is left after repeated inflation to the nerve part of the ear. For example, the second case he mentioned is mainly a case of middle ear deafness or Eustachian catarrh. There may be some complication from the nerve part. The negative Schwabach (a') points to this.

Amongst the cases of toxic deafness he wondered if Dr. Lewey came across labyrinth deafness due to nicotin. He had found that these cases are more frequent here than is thought and he was surprised to hear a cigar-maker state that in his shop nearly everyone employed was hard of hearing. He thinks it would be worth while to try and make a regular investigation of this form. He thinks that there is an explanation for the fact that nicotin deafness is more frequent here than in Europe. We know that in this country cigar-making is mostly a house industry, while in Europe it is mainly a factory industry. In factories all precautions are taken to aspirate the dust from the tables and to avoid the use of too much tobacco on the part of the employes. Here no precautions are taken and every cigar-maker smokes practically from morning to night. An investigation of these conditions would be interesting from more than one point of view.

Dr. Joseph C. Beck asked if the essayist came across the recently much discussed subject of neuritis or deafness following the injection of salvarsan. It has fallen to his lot to work out this subject recently and he found forty-seven cases in the literature of deafness, or, at least, deafness and associated irritation of the vestibular apparatus and other nerve affections following the use of salvarsan, and recovery following another injection or two or three injections of salvarsan, showing that it is an incomplete destruction of the spirochetes which are in the nerves themselves. By the first injection they are brought to a greater activity, producing a so-called Herxheimer reaction in the nerve sheath, and then by another injection they are destroyed and the nerve completely recovers. This is an extremely important subject. Thus far Dr. Beck has used salvarsan a great deal and has not come across a single case from his use of the drug. If any of the members had encountered this condition he thought it would be a good time to speak of the cases before the doctor closed the discussion.

Dr. Lewy (closing) thought that what Dr. Shambaugh said is true—that these cases are common in connection with any severe inflammation of the ear, when we are apt to have more or less involvement of the labyrinth, and two of the cases reported were associated with a middle ear affection of mild degree and bone conduction was shortened instead of lengthened. One, however, appeared to be a pure nerve deafness. Since writing the paper he had seen two trained nurses and had found the same reaction to the tuning-fork as reported. A blood examination was made and the hemoglobin found approximately normal in both cases; leukocytosis 2,000 in one; 2,000 and some hundred in another. These were simply fatigue cases.

In the part of the paper which he did not read reference was made to the toxic neuritis, and nicotin was mentioned. He found quite a few references in the literature to that particular form of poisoning, resulting in depression of hearing. He only found one case, published by Dr. Pierce some time ago, in which tuning-fork tests were definite—no loss of either upper or lower tone limit but shortened bone conduction.

His idea in bringing up this subject was that it might be that through a study of these so-called functional forms, or intermediate forms of labyrinthine trouble, we might be led to the prevention of those cases that come to us in the stage of degeneration, when we can no longer do anything for the patients.

With reference to salvarsan, he found quite a number of references to the supposed destructive effect on the acoustic nerve either of the salvarsan or of the spirochetes under the influence of the salvarsan. In those cases we must remember that arsenic is a well-known nerve poison, and is used by dentists in devitalizing pulps. So it is pretty hard to say whether or not the arsenic preparations destroy the nerve directly or simply excite the spirochetes to increased activity.

Dr. Lewy cited a case of syphilis in a man who had for years had a conduction deafness, who had been treated for a syphilitic eye lesion by immense doses of potassium iodid, and finally by an injection of salvarsan. Almost the next day he began to notice a very marked reduction in hearing, with quite violent tinnitus, and was for a week or more in great distress. He worried about loss of hearing, but after withdrawal of the iodid, which again followed the administration of the salvarsan, he improved in hearing somewhat. This man had had otitis media before he was ever treated for syphilis.

TRANSPLANTATION OF A PIECE OF CARTILAGE TO PREVENT PERFORATION AFTER SUBMUCOUS RESECTION

(Abstract)

RICHARD H. BROWN, M.D.

Whenever in the case of septal operation holes or tears occur through the two membranes opposite each other, a straight piece of cartilage, the largest available, that has been removed from the front of the septum, is shaped into a splint and inserted between the two membranous flaps and held in position during healing. This serves as a temporary support during the healing of the membranes and is slowly absorbed, but lasts long enough to prevent the occurrence of perforation of the septum.

Seven cases are reported, six perfectly successful.

DISCUSSION

Dr. Chas. M. Robertson has not tried putting in loose pieces of cartilage but has tried, where there was a straight piece of cartilage, swinging a flap down into place but not taking the cartilage entirely out. In those cases the flap heals very kindly and the cartilage is left as it gets its nutrition from the part of the stump that is not cut off.

Dr. R. H. Brown (closing) said that it has been an extremely easy method of preventing what would have been severe perforations in the seven cases reported. He has a case in prospect that he is anxious to operate on and had hoped that the patient would have it done before he read his paper. This is a case where some doctor, in operating, has left quite a large perforation, without remedying the

defect of the septum at all. It was simply hacked through in an endeavor to do something that he did not understand, and a perforation large enough to admit the little finger is present. It is an extremely serious deflection, with very marked interference with breathing. He contemplated in this case simply going in and, disregarding entirely this perforation, peeling up his flaps just as before, being very careful to save as large a piece of reasonably straight cartilage as possible, and, after finishing everything, put it in place and stitch down the mucous membrane on each side. He believes the operation will be successful.

PRIMARY TUBERCULOSIS OF THE MIDDLE EAR

CHARLES H. LONG, M.D.

The case reported was that of a healthy child, female, 11 months of age, who had suffered ten months from a discharge of the ear. Examination proved the presence of tubercle bacilli in the discharge. The radical operation was performed, which was followed by a perfect recovery.

Conclusion that the disease was a primary infection:

1. Age of child at period of onset.
2. No other tubercular focus.
3. No tubercular diathesis.

The probable avenue of inception of the disease was the Eustachian tube, and the case being a surgical one suggested the bacillus of bovine type.

DISCUSSION

Dr. L. N. Grosvenor asked Dr. Long if a pathologic examination had been made of the adenoids and if they showed anything. In his pathologic examination of many adenoids he has found only one, removed from a little fellow who was failing rapidly, in which the adenoids showed typical tubercular giant cells pathologically. No bacteriologic examination was made. But on removal of these adenoids the little fellow picked up and has been remarkably well ever since.

Dr. H. Kahn did not suppose this disease was so rare. Although his experience has been rather limited he knows of two cases which he thinks were primary tuberculosis of the ear. One was in a laboratory worker—a pathologist or bacteriologist—who worked with tubercle bacilli and other organisms. He noticed a painless discharge from his ear without any other disturbance. He injected some of the pus from his ear into a guinea-pig and also inoculated it into the eye of a rabbit. In both animals tuberculosis developed: the guinea-pig died and a typical tubercle developed in the eye of the rabbit. This man left this climate, went to California, and is now well.

Another case, a man aged 20 or 25 years, developed an otitis media which began in about the same way, but his ear became secondarily infected and he had an acute otitis media on top of his possible tubercular infection. He is in Denver now and when last heard from, about three months ago, said he was cured.

These two cases seem to controvert the opinion that this disease is a disease of childhood. It seems as though it can occur at any age. Both of these cases occurred in adults.

Dr. Geo. E. Shambaugh in discussion stated that primary tuberculosis in the ear, just as in the nasal chambers, is quite unusual. In the treatment of such lesions one must not lose sight of the fact that foci of tuberculosis located in the ear may respond to the same general treatment which affect lesions in the other parts of the body. Our first impulse in cases of primary tuberculosis in the ear, as in the nose, would be, if possible, to remove this surgically. Yet surgical interference is not always advisable. In these cases one should give the patient the benefit of the same treatment we would institute for incipient lung tuberculosis.

Dr. Shambaugh cited a case of a young child less than two years of age, who suffered from primary tuberculosis of the middle ear with an involvement of the glands of the neck. The diagnosis was based on the clinical history and the microscopic findings of tissue removed from the middle ear. The child's general condi-

tion was good and by removing repeatedly the granulations as they formed in the tympanum the middle ear trouble finally subsided, when the enlarged glands of the neck were also removed.

Dr. Chas. M. Robertson thought there was no question regarding the diagnosis of primary tuberculosis of the ear in the case cited by Dr. Long, because the child was not old enough to have the disease elsewhere, unless it was a hereditary tuberculosis. In nearly all the cases of tuberculosis of the ear which he had seen he had never been satisfied that it was a primary tuberculosis, because he could not examine all the tissues of the body. There may be a small focus of tuberculosis in some remote portion of the body, in the joints or in the mesentery, or some place that is inaccessible.

His experience with tuberculosis of the ear is about the same as Dr. Long's—that it is a severe disease tending to destruction of tissue, and in those cases in which the case is allowed to go unabated there is nothing to expect but further destruction. He has seen cases of tuberculosis of the ear that were probably secondary and were very slight in degree, which get well of themselves, but the majority of the cases go to the bad.

Dr. Joseph C. Beck reported a case of tuberculosis of the ear in a girl aged 12 years, who had a chronic suppuration for a number of years, in which the culture was negative as to tuberculosis. He did a radical mastoid. She had had previously a simple mastoid for this condition and the suppuration continued, so he did a radical mastoid, examined the bone chips, and has some beautiful specimens of bone tuberculosis. This case recovered after the radical mastoid. It would have added to Dr. Long's case had he examined the granulations and the mastoid bone chips removed for tuberculosis.

Dr. G. W. Boot said that in Siebenmann's clinic in Basel he was told that they found a surprising number of their mastoid cases to be tubercular—something like 30 per cent. of the cases in children, as he remembered it. He asked them how they made the diagnosis and was told that it was made by microscopie examination of the decalcified bone chips removed at operation.

Dr. J. Holinger has at present under his care a parallel case to the one reported by Dr. Long. The child was born shortly after New Year. Delivery was with forceps and the mother died soon after the birth of the child. The forceps was laid over the one ear and mastoid. Following this, there was a swelling over the site where the forceps had been used, extending down into the neck and around the mastoid process. This swelling became quite large. At the same time a very free discharge from the ear set in and the child was seen by Dr. Holinger for the first time when it was about three months old. He at first thought it was an ordinary suppurating otitis media but there was no result from careful treatment. One day when the child began to cry he noticed a facial paralysis of that side, so it was evident that the process had made progress, and he operated. He cleaned out the wound as completely as possible. He could not find any granulations in the antrum and there was no indication to go down to the attic, but the parts behind the insertion of the mastoid muscle were removed because there was quite a good deal of necrotic tissue. Recovery is extremely slow. Now, after about eight weeks the glands on the neck are still swollen and a piece of bone is still white and free from granulations. There is no question but that the process is tubercular. In Dr. Long's case, as in Dr. Holinger's, the ears seemed to be the primary foci but in Dr. Holinger's the glands of the neck were affected very early and there is a history of traumatism.

Dr. Norval H. Pierce thinks we should recognize the fact that there are two well defined forms of tuberculosis that affect the ear—whether primary or secondary is of very little importance. The probability is that an ear with tuberculosis, notwithstanding the fact that we do not recognize other foci of infection, is practically always secondary: either secondary to tuberculosis of the tonsils or to lymphoid structures in the throat. However, that is of very little importance. The most important point, he thinks, is that we have two well defined forms of tuberculosis of the ear: one, described by Bezold, a fibroid exudate on the mucosa, which shows very little tendency to invade bone but which shows abundance of

tubercle bacilli and runs its whole course as a very mild form of inflammation, hardly to be differentiated from the ordinary catarrhal type, so-called; and the other, in which there is immediately an extensive invasion of the bone. Those are the two extremes of this process and we may have mixtures all the way in between; types where it begins in the mucosa and runs for a long time apparently in the mucosa, the muco-periosteum, and then invades the bone. In the former type we can find numerous tubercle bacilli in the exudate and mucosa. If we scrape deeper we find the giant cells and the tubercles, but this form heals up readily in the majority of cases by local treatment with a mixture of boric acid and iodoform packed into the ear, not blown into the ear, but the external auditory canal tamped full of this powder.

The other form, in which there is a tendency more or less to invade the bone, cannot be cured by local applications. It cannot be cured in any other way than by thorough removal by radical operation, and it is the part of the clinician to determine with which of these types he has to do and when that is determined the therapy is easily carried on.

It is no longer believed that giant cells constitute a pathognomonic sign of tuberculosis. The most trustworthy differential point is the identification of the tubercle bacillus in the tissue itself. If scrapings injected into the anterior chamber of a guinea-pig's eye produce tuberculosis there is strong probability of the tubercular character of the process. This, however, does not throw out the possibility of the accidental presence of tubercle bacilli in the discharge. In some forms, therefore, it is very difficult to differentiate whether we have a simple inflammation or a pure tuberculosis. The point he wished to make is especially that there are these two forms of tuberculosis as it affects the ear, one calling for very simple remedies, and which has a very good prognosis, and the other form, the bone form, which calls for radical measures.

Dr. J. Holinger wished to add that there is a third form of tuberculosis of the middle ear, according to Bezold. It is the tuberculosis of the ear in old consumptives, in the last stages of the disease. The tissue of the middle ear just breaks down extensively. In these cases there is very great destruction of part of the middle ear and of the labyrinth within say two to three weeks, but they usually end with the death of the patient, as these cases are only observed in the last stages of tuberculosis of the lungs.

Dr. Norval H. Pierce said that he included the third class referred to by Dr. Holinger under the second class, which he thinks is better—the bone tuberculosis in contradistinction to the mucous membrane forms of the disease.

Dr. Chas. H. Long (closing) wished to add that at the time his patient came under observation he was not aware that primary tuberculosis was such a rare disease and thus failed to take advantage of other ways of clinching a more certain diagnosis of primary tuberculosis. After the operation was performed he commenced to look up the literature and found that it is really very rare. So he sent out a list of six questions relating to the present status of primary tuberculosis of the ear to ten of the most noted otologists in the country, among them Dr. Clarence Blake of Boston, who replied, stating "that he was unable to answer satisfactorily to himself or to me the questions, because of the lack of classified data." Whether the tuberculosis in this case was a true bone tuberculosis, one of the mucous membrane, or an accidental one, it would be impossible to say positively, but there was destruction of the malleus and incus and the condition of the ear wound afterwards was very indicative of the healing of tubercular wounds in general.

Answering the question regarding adenoids, he was not aware that he had a case of tuberculosis at that time.

He only had one smear made, and should have had the tuberculin test before operating, but they were not in as good position at that time to make tuberculin tests as later on.

He thought his case was one of the mucous membrane group, referred to by Dr. Pierce, but there did not seem to be any tubercular involvement of the mastoid cells.

The length of time that this case had gone on without any material improvement seemed to be sufficient indication for a radical operation.

As to whether it was a primary case or not, as Dr. Robertson said, that is a very difficult thing to state. We may have a tubercular focus anywhere in the body, especially in the mediastinal glands, which has taken place very early in life, because it is stated that 97 per cent. of human beings have been infected with tuberculosis some time in their lives, so that it is very difficult to say in any of these cases that it is really primary, but this child being so young it did not seem possible that it could be a secondary infection.

CHICAGO OPHTHALMOLOGICAL SOCIETY

Regular Meeting, Feb. 19, 1912

A regular meeting was held Feb. 19, 1912, with the president, Dr. Thomas Faith, in the chair. The following program was presented:

A CASE OF ORBITAL DERMOID

Dr. George F. Suker presented a case of orbital dermoid in a baby, aged four months, whose mother had noticed a few days after its birth a small pin-point elevation on the upper right brow at the angle. A physician lanced it; it evacuated itself; filled again, and was again lanced fourteen days afterward. Dr. Suker saw the baby at this time at the request of Dr. Hultgen. On probing, he found a sinus leading downward toward the external orbital angle and then passing along the upper lid toward the internal canthus. He removed several hairs from the depth of the tract. He laid the sinus open, retracted the upper portion of the lid, and worked subcutaneously toward the inner canthus, removing a large, dense, firm cicatricial, sac-like tumor, filled with caseous material and some hard substance. He then passed the probe backward toward the sphenoidal fissure, outlining some more tumor mass and cleared out the tract. The tumor had penetrated the levator palpebrus muscle, destroyed the superior and external recti and the oblique muscles. All went well for about three weeks, when a swelling again appeared and a discharge came from a sinus in the upper retro-tarsal fold. He made the second incision directly over the eyebrow, extending from angle to angle, retracted the upper lid downward and laid bare the orbital wall above, going back to the sphenoid fissure and taking out everything except the nerve. He found one or two small sacs which contained dermoid material. He excised the retro-tarsal sinus; did not irrigate or pack the wound, but closed it. The tumor involved the lacrimal gland, it also was removed. The globe is fixed downward. The iris reacts to light, and the nerve-head is intact. The wound is still discharging and further procedures are under consideration.

Microscopic sections of the mass made by Dr. Hultgen disclose cartilage, sweat and sebaceous glands, and hair follicles. The question is, is it a dermoid or a teratoid? The tumor had worked itself through the periosteum and began to erode the orbital wall at several points.

DISCUSSION

Dr. Thomas Faith suggested that if the discharging sinus did not contain bacteria, it might be well to fill it with bismuth paste, providing its limits are known and that the paste would not press on the optic nerve.

A CASE OF RUPTURE OF SCLERA

Dr. M. H. Lebensohn presented a man, aged 58 years, who slipped while shoveling coal, striking the lower eyelid of the left eye on the edge of the coal car. He became blind at once, and there was much discoloration of the eyelids, but no swelling except a protrusion on globe at upper and inner limbus. The protruding mass was clear, but its contents could not be determined. From the shape and firmness it looked like the lens and vitreous. The only treatment instituted was a pressure bandage and strict antiseptic measures. Enucleation is indicated, as vision is absent. Patient does not complain of pain.

PENETRATING WOUND OF SCLERA

Dr. M. H. Lebensohn presented a boy, aged 8 years, who was stabbed in the right eye with a knife on January 23. The knife entered the upper lid and passed downward into the sclera, the vitreous protruding from the wound. Vision was *nil*. A pressure bandage was applied for three or four days, and when there was no evidence of infection the wound in the sclera was sutured. It healed promptly and vision is now fingers at three feet. The fundus shows where the knife passed through. There are opacities in the lens.

A CASE OF SUB-HYALOID HEMORRHAGE

Dr. H. W. Woodruff reported a case of sub-hyaloid hemorrhage. The following is the report of a case seen by Dr. H. W. Woodruff in consultation with Dr. A. W. Lloyd of Hammond, Indiana. The history, as taken by Dr. Lloyd, is as follows:

"Patient, Mr. S. T., aged 38 years, policeman, was first examined Jan. 15, 1912. Two days before, about 11 a. m., while shaving he noticed he was blind in the right eye. Subjective symptoms other than the loss of vision were absent. An ophthalmoscopic examination showed a large hemorrhage circular in outline in the macular region with well defined edges except at the temporal margin where it gradually faded off into the surrounding fundus. On the opposite side the hemorrhage covered a small portion of the disc and in this situation the line of demarkation was particularly well marked. He could see a light at 10 in., the light appearing red. No history of lues or other infectious diseases or of the cardiovascular system. Urinalysis and tuberculin tests negative. The patient was treated for a time by rest in bed with hot applications, potassium iodid and mag. sulph. A gradual improvement took place until now the patient can count fingers at 1 foot."

The interest in these peculiar effusions centers around their rarity, the sudden and complete loss of central vision and the possibility of complete absorption with no damage to retina or vitreous. Hotz writing in 1893 reports three cases. That being the number he had seen in 20 years of practice. All of them recovered normal vision. The cause of one was ascribed to menstrual disorder. Another to a cough and the third could not be explained. One patient died from apoplexy one year later. Dr. Hotz also referred to cases reported by Dr. Haab in which the hemorrhage was in one case on the nasal side of the disc, in another below the disc. The majority of them, however, were in the macular region.

DISCUSSION

Dr. Osear Dodd said he had a similar case occurring in a young lady, about twenty, after the ingestion of santonin for vermifuge purposes. Similar cases have been recorded in the literature. In this case there was a large hemorrhage involving the same area as in Dr. Woodruff's case, and vision was restored practically to normal.

Dr. Thomas Faith cited the case of a man who was injured in one eye a year ago, and had what he at first considered a subhyaloid hemorrhage. The patient had an absolute blind spot, but after several weeks the shape of the hemorrhage did not change by gravity, as is the case with subhyaloid hemorrhage. The eyeball was not ruptured and from external appearances, was not injured. After a month the hemorrhage began to absorb around the margins. Later there appeared a little dark outline in the chorioid. After the hemorrhage had been completely absorbed it showed that there had been an injury which ruptured one of the chorioidal vessels, and the hemorrhage ensued, which from its location made it impossible to see whether any retinal vessels had been ruptured. There was a complete coloboma in the chorioid, with rupture and a tear across one of the large veins.

Dr. E. J. Gardiner said that Dr. Woodruff need not be discouraged about the "slowness in clearing up," and stated that three or four years ago he had seen a much more extensive subhyaloid hemorrhage, producing nearly complete blindness, clear up after a year and a half. When the patient was last seen, all but the lower portion of the hemorrhage had disappeared. Unfortunately the tissues in the macular region had been so much affected that there was central blindness. The

patient was 63 years old. He thought that Dr. Woodruff would be justified in giving a relatively favorable prognosis in his case.

Dr. O. Tydings said that several years ago he had a patient, over 70 years old, who had such a hemorrhage. There was little vision in the eye at the time. Subsequently the condition cleared up entirely, but vision was lost.

Dr. David Fiske cited the case of a boy, aged 14 years, who, in September, 1911, suddenly lost sight in his right eye. Vision had previously been normal, except for half a diopter of hypermetropia. There was no history of trauma. The boy was riding on the platform when suddenly vision in his right eye failed. On examination there was found a large hemorrhage in the region of the macula, with no vision, except for light and hand motion. Vision is much better now, and the hemorrhage is pretty well cleared up. The vitreous is somewhat cloudy, with opacities.

Dr. H. W. Woodruff in closing the discussion said that cases of this kind were comparatively rare. The prognosis, he said, was generally favorable, although in his case the condition is not clearing up as rapidly as it is usually said to do. The hemorrhage has cleared up somewhat and vision has improved, but even after a month absorption is far from being complete.

A CASE OF INTERSTITIAL KERATITIS

Dr. Mortimer Frank reported the case of a young man whom he first saw in September, because of a typical interstitial keratitis. The patient had syphilis five years before; a Wassermann was positive. He was given mixed treatment, and in six weeks the cornea began to clear up. At present there are only a few opacities in the center of the cornea. The two central incisors are slightly notched. There is no erosion of the dentin.

DISCUSSION

Dr. E. V. L. Brown suggested that a Wassermann test be made of the patient's father and mother, because in spite of the history the keratitis might be a congenital condition.

Dr. Thomas Faith thought these cases nearly all congenital. He has never seen but two or three acquired cases of interstitial keratitis.

Dr. H. W. Woodruff also regarded it as a case of congenital interstitial keratitis, and would not consider the Wassermann reaction or the history, because he thought the patient's facies indicated an inherited disease. The teeth and the angles of the mouth, he thought, were characteristic of inherited syphilis.

Dr. Oscar Dodd would not disregard the possibility of acquired syphilitic interstitial keratitis, because he has seen two cases, before the Wassermann test was in use, in which there were absolutely no signs of hereditary syphilis, but the history of acquired syphilis was positive. These cases, he said, are not similar in appearance to the ordinary cases of interstitial keratitis. They are apt not to begin at the periphery, extending inward, but begin in spots. Dr. Loring, he said, presented two patients to the society some years ago who gave the same history. They also were different in appearance and cleared up under treatment.

Dr. George F. Suker looked up the literature of the subject not long ago, and failed to find a single case reported in which there were not some of the characteristic markings in the teeth. If any teeth show these markings, the permanent teeth are the ones. It is not necessary to have the incisors marked; in fact, the molars are more apt to show a characteristic marking. Instead of having the four cusps covered by enamel, the enamel is absent and the surface of the tooth shows dentin pegs, which in time are ground flat. Where the cusps should be the dentin proliferates. These are the so-called Fournier teeth. It is not necessary to have peg teeth or separated teeth or notched teeth to determine the question of inherited syphilis. The markings of the first permanent molar are always present. In no case of interstitial keratitis which he has seen were they absent.

Dr. H. S. Gradle suggested that the luetin reaction of Noguchi might prove of value in this case. It is negative in the primary and early secondary stages, but is positive in the late secondary and tertiary stage in from 75 to 80 per cent. of cases.

Dr. Mortimer Frank in closing the discussion stated that inasmuch as the young man had the initial lesion of syphilis and the keratitis followed, he considered it very likely a case of acquired and not congenital syphilis.

A CASE OF EPITHELIOMA OF THE LID

Dr. Oscar Dodd presented a patient who had epithelioma of the lower lid, which he removed, securing very good results. The tumor involved about one-third of the lid, and was about one centimeter in depth. He removed the lid for about twelve millimeters lengthwise and three or four millimeters sideways; loosened the conjunctiva and removed a "V"-shaped piece of skin. He then made an incision in the skin from the external canthus of the eye, cut the tendon of the lid, brought the temporal part of lid over, and sutured it, making a skin flap to cover the defect. The lid at the present time is soft and pliable, and acts as well as before.

DISCUSSION

Dr. George F. Suker referred to a case of melanosisarcoma of the lower lid in a child, aged 8 years. He did the same operation, but in order not to have the upper lid drop down over the nap angle, he fixed the edge directly into the external canthal wound. He believes that the sliding operation gives a much better result than any other.

Dr. Oscar Dodd in closing the discussion said that he had failed to find any description of the operation he had carried out in any of the text books.

A CASE OF TUBERCLE OF THE CHORIOID

Dr. Charles C. Clement (by invitation) presented a patient, a male, aged 17 years, Swedish descent, stenographer, who came to the Illinois Charitable Eye and Ear Infirmary about five months ago complaining of failing vision in the right eye of about three weeks duration. Family and childhood history negative. No recent temperature, cough or loss of weight. No specific history. The present trouble came on insidiously and without pain, failing vision being the only symptom. At the time of admission it was 20/70 R. E. and 20/20 in L. E.

In the affected eye there was slight dilatation of the pupil, normal tension, slightly deepened anterior chamber, cloudiness of the aqueous, very slight pericorneal injection, and a precipitate of fine dots on the posterior surface of the cornea. Opacities in the vitreous somewhat obscured the details of the fundus but a round yellowish-white spot somewhat smaller than the disc could be seen situated above the disc and to the temporal side, at about 11 o'clock. It appeared to be slightly elevated and at that time its borders shaded gradually into the surrounding fundus. Since that time degenerative changes have evidently taken place and a rose-colored border has appeared around the lesion. Urinalysis was negative. Wassermann test was not made. Von Pirquet cutaneous test was positive. Subcutaneous test with old tuberculin was positive. He has been given gradually increasing doses of tuberculin T. R. under which he has shown slow but constant improvement. The cornea and vitreous have cleared to a considerable extent, his vision now being 20/40 in the affected eye. He was recently examined at the Rush Medical College and no evidence of tuberculosis, other than that in his eye, was detected.

DISCUSSION

Dr. Mortimer Frank had seen quite a number of cases of tubercle of the chorioid, because of the large number of children with tubercular meningitis who are brought to the Michael Reese Hospital. Unfortunately, these children were not seen by him until shortly before death, because the ophthalmologist is not called in until death is imminent. He has seen one case in a man aged 18 years

which terminated fatally. In all the cases the tubercle bacillus is found in the spinal fluid, and he thinks that the bacilli should be looked for in all cases, especially if they are known to be cases of tubercular meningitis.

Dr. Oscar Dodd, whose patient Dr. Clement reported, said that the man had been receiving progressive doses of tuberculin and that there is considerable improvement in his condition. He called attention to two kinds of tubercular chorioiditis, one kind occurring in cases of miliary tuberculosis, where the presence of tubercles in the chorioid are a sign of approaching death. The cases of solitary tubercles are more rare, and usually go on to complete healing. Usually there are no other symptoms of tuberculosis to be found. A positive tuberculin reaction is obtained, however. The patient recovers, although sometimes vision is affected. In one of his cases the tubercle was in the macular region, and central vision was destroyed.

Dr. Thomas Faith asked whether there was any change in the acuity of vision after the tuberculin test?

Dr. Charles C. Clement in closing the discussion stated there seemed to be no local reaction to the tuberculin given for diagnosis. These cases, he thought, are more common than is usually supposed. They ordinarily escape observation because they usually appear as terminal manifestations of general miliary tuberculosis in which any eye symptoms are so overshadowed by the grave general condition an oculist is not consulted and even if he should be called the tubercles may be situated so peripherally as to escape observation with the ophthalmoscope and be found only at the post-mortem.

A SPECIAL FORM OF PROLIFERATING CHORIOIDITIS

Dr. E. V. L. Brown reported a special form of proliferating chorioiditis occurring in a man aged 58 years, who was struck in the right eye thirty-five years previously by molten metal and had been blind ever since. The eye was removed for secondary glaucoma following eight weeks of severe pain. The fellow eye has never been inflamed.

The sections show a round, epithelioid and giant cell infiltration in the chorioidea; the veins are thrombosed and plugged with cells and most of them completely destroyed. Older areas are almost exclusively made up of epithelioid cell proliferation. No new vessels are found. This infiltration extends over the edge of the disc into and fills up a deep glaucomatous excavation, goes through the lamina cribrosa and forms a large retrolamellar round-cell node. This node invades and fills the trunk of the central vein. The disc is swollen far forward. The cells also invade the retina near the disc. Some obliterative endovaseulitis of the retinal vessels is present. The anterior part of the eye shows a recent organized plastic uveitis and a very recent suppurative endophthalmitis. Huge areas of chorioidal pigment epithelial cell proliferation are found in front of the equator.

The unusual feature of the case is a necrosis of the infiltration in the chorioidea, often in all layers, anterior to the equator, and of the adjacent Dahlen epithelial nodes which, of course, depend upon the chorioidea for nutrition; the tissues over the disc are also necrotic.

The writer holds the condition is not sympathetic infiltration because 1, the other eye was not involved, 2, the enucleated eye was never penetrated, 3, necrosis of the infiltration is present.

The process does not in any way closely resemble tuberculosis or syphilis, and stains for organisms are negative.

A very similar case has been reported by Fuchs (Arch. f. Oph., page 437) but this eye had been opened and the other eye was not inflamed. Fuchs held the condition to be a peculiar form of proliferating chorioiditis about which nothing further is known than that it is a finding similar to sympathetic infiltration but with necrosis. The present case emphasizes the great tendency to invade and thrombose the veins, and shows that it can occur without penetrating injury.

RICHARD J. TIVNEN, Secretary.

HYDROTHERAPY IN ACUTE OTITIS MEDIA

HENRY F. LANGHORST

ELMHURST

Having had success with a hydrotherapeutic procedure, in the treatment of acute otitis media, I wish to report a few cases in which this method was applied.

Mrs. U., after a slight cold, contracted a few days before, there appeared a severe pain in the ear. This pain was severe and throbbing with slight chill, headache, muscular soreness and fever. Examination: pulse 90, temperature 99.5. Speculum revealed diffuse redness of the membrane. No discharge from the nose. Some tenderness between the angle of the jaw and the edge of the sterno-mastoid muscle; just beneath the mastoid process.

The nurse was instructed to irrigate the ear continuously with a hot normal salt solution by means of a fountain syringe. The bag was elevated sufficiently to insure a gentle flow from the nozzle. The heat was applied in this manner, continuously for two hours and intermittently the next two days. The effect was markedly anodyne. After this procedure had been operative about four hours another examination was made and the membrane was bulging. It was predicted that a rupture would, undoubtedly, take place during the night. During the night, when the irrigations were not operative, a strip of gauze, saturated with a solution of aluminum acetate, was inserted into the external auditory canal. Over this was placed a hot moist pack and an occlusive dressing applied. The patient had a comfortable night. On examination the membrane was found intact; the bulging was less and there was a shriveled appearance to the ear drum. Temperature was 99. Other symptoms improved. In the evening, the patient noticed a bloody discharge from the nostril of the same side. That evening the temperature abated and patient was comfortable. The bloody discharge continued for a few days. The hearing was obtunded for another week and after this the patient was normal.

Wm. W., aged 12 years. His attack of earache followed or complicated an attack of influenza. Symptoms: Chills, sore throat, fever, cough and coryza. On the fourth day when he was in great pain with earache he came under observation. His pain was intense, he would run back and forth in the room, crying out aloud. He had the adenoid facies, enlarged glands and a muco-purulent discharge from the nose. Temperature 101. Tenderness beneath the mastoid and on elevating the ear. The speculum revealed a very much reddened tympanic membrane. The treatment was substantially the same as in the former case. In addition to this tincture of aconite, urotropin and calomel were prescribed. The pain yielded to the irrigations, but persisted for two more days. On the third day, the patient noticed blood in the discharge from the nose. Patient felt well but had a recrudescence in a week's time; this responded to similar treatment, however.

In all, six cases were treated along similar lines, with the result of an intact membrane and a drainage through the Eustachian tube.

The heat, evidently, reinforces the membrane sufficiently to prevent necrosis of same. This is caused either by the constricting effect of the heat or by the increased activity of the leukocytes.

This treatment maintains the integrity of the tympanic membrane, prevents suppuration with its trail of complications and greatly ameliorates the suffering.

THE FOX RIVER VALLEY AND AUX PLAINES
MEDICAL SOCIETIES

The joint picnic of the Fox River Valley Medical Society and the Aux Plaines Branch of the Chicago Medical Society was held at Mill Creek Park, Aug. 28, 1912. The attendance was one of the largest ever known in the history of the society meetings, and many went to enjoy the beauties of the park and to hear the scientific program held in the afternoon following the picnic luncheon.

Papers were read by Drs. Thomas Motter of Oak Park, James W. Vanderslice of Oak Park, Emil Windmuller of Woodstock, A. R. Reder of Aurora, and A. F. Krueger of Chicago. The discussions which followed the reading of these papers were led by Dr. E. H. Abbott of Elgin, Dr. C. E. Hamilton of Austin, Dr. W. F. Scott of Melrose Park; Dr. George Haan and Dr. J. W. Macdonald of Aurora.

IROQUOIS AND FORD COUNTY MEDICAL SOCIETIES

The Iroquois and Ford County Medical Societies gave a banquet on Tuesday, September 3, at Gilman, to Dr. T. N. Bone of Loda, the oldest physician in Iroquois County. A loving cup was presented in an address by Dr. S. N. Wylie, of Paxton. Dr. Bone is treating the fourth and fifth generations since his advent into professional life, and has seen many remarkable changes in the character of medical practice.

LAKE COUNTY

Our meeting held at Wauconda September 10 was very interesting and enjoyable. About half a dozen members arrived early and as it was then too warm for ball-playing, an hour or longer was spent in several good games of checkers in which Wauconda and Waukegan shared the honors, and Highland Park took the rest. Another hour or two was spent in batting, so-called fielding and the ancient game of "One Old Cat" and then enough men having arrived, sides were chosen and a very exciting game followed resulting in victory for one side or the other by a score of about 12 to 6. Some of the special features of this game were the marvelous base stealing by Foley in which, following his well known habit of removing gall-stones, appendices and various articles belonging to others, he proceeded to remove every base that he came to and if not watched, would probably have brought them home. Fuller did some phenomenal catching, assisted by Ludwig as backstop, the latter not being obliged to elase more than nine out of every ten balls pitched. The batting was simply terrific, especially that of Gavin and Roberts of Waukegan, who actually hit the ball after about nineteen strikes. Brown acted as coach for both sides with general satisfaction to himself. Knight played a brilliant fielding game until a ball was knocked in his direction when he climbed over the fence and took refuge in his auto. After the game we were all ready for the bounteous repast of fried chicken, ham, beans, salad, pie, cake and other dainties suited to our very delicate appetites and digestive powers. Here also, Brown and Knight especially distinguished themselves by a marvellous display of gastronomic energy and endurance after their strenuous efforts upon the ball field.

Following supper we went to the Methodist Church for our meeting—medical, not religious. Professor Kent, president of the village Board, gave an excellent address of welcome after which the minutes of the previous meeting were read. Dr. Sheldon of Highland Park read an interesting paper on "Army Sanitation" in which he compared the sanitation of previous years, especially of the Spanish-American War, with the vastly improved methods of the present, and concluded his article with these words: "There has been much written in the journals of late in regard to the typhoid vaccination and the venereal prophylaxis which has been adopted by the Army and Navy. It is too early to make statistics in regard to it, but reports from the English army and our own seem to indicate that it is effective. Venereal prophylaxis is in general use in the Navy and is being used largely in the Army. The Navy reports indicate that venereal dangers are greatly reduced by its use and the opinion in the Army seems to be generally favorable. A separate latrine for soldiers suffering from venereal troubles was provided at Ft. Riley. At this latrine the calomel ointment and argyrol solution for the application of the treatment was placed in a small wall cabinet, the name of the

soldier, time of exposure and time of application of the treatment being recorded. By far the greatest percentage of sickness in the Army is venereal and the Medical Corps is on the alert for any measure for its reduction. An order is being considered and will probably be issued in the Army to make failure in taking the prophylactic treatment, when indicated, a misdemeanor and subject to summary court martial.

I have the greatest admiration and respect for the medical men of the Army and Navy. What splendid battles they have waged against yellow fever, malaria, cholera and the other diseases incident to the countries in which they have worked. It is said that every tie laid in the railroad from Panama City to Colon represented a human life. The Canal Zone now has a lower mortality than many of our great cities. These medical men would be towers of strength in time of war, famine, pestilence or any great national calamity. They are gentle, brave, unassuming but with that trained latent power which fits them to face and solve the great problems which have to do with the welfare of the human race.

The paper was ably discussed by Dr. Ludwig, surgeon at the U. S. Naval Station. Dr. R. C. McCormick of Wauconda then read a paper on "What Medical Schools Don't Teach About Obstetrics," which was as amusing as it was interesting. Dr. Fuller of Wauconda reported a very interesting case of gangrene of the lung in a boy who was kicked by a horse. Dr. Foley operated, removing part of the gangrenous tissue and providing for drainage and although the prognosis seemed almost hopeless at the time, the patient made a good recovery and was exhibited at the meeting by Dr. Fuller with justifiable pride. An interesting discussion of the case followed, participated in by Drs. Foley, Watterson, Gavin and Herschleder.

The secretary then read an article on "The Treatment of Scarlet Fever," by Fischer, published in the July number of *Archives of Pediatrics*.

After an informal discussion by Professor Kent and others of the best way to secure a pure milk supply and to educate farmers on the subject and the decision to make this the main topic at the Wauconda meeting next year and invite the farmers, the meeting adjourned.

The following doctors were present at the meeting: Drs. Foley, McCormick, Herschleder, Sheldon, Galvin, Fuller, Bellows, Jolley, Ludwig, Watterson, Brown, Knight, Shearer, Weichelt and Bouton.

The following dentists were present: Drs. Furbey, Watson and Roberts.

On September 17 occurred the meeting of the Second District Medical Society of Wisconsin, at the Penoyer Sanitarium in Kenosha, to which our medical society was cordially invited. We first listened to a very interesting and instructive address by Dr. J. B. Murphy on "Diseases and Injuries of Joints," illustrated by a great number of photographs and skiagraphs of cases. The address lasted nearly two hours and was filled with valuable advice and most practical points especially useful to the general practitioner. Dr. Murphy is almost equally famous as a clinical teacher and as a great surgeon.

He was given a cordial vote of thanks by the society. We then gathered in front of the sanitarium, most of us accompanied by our better halves and wore our prettiest smiles while the photographer did his best. We were then treated to a most excellent dinner, about a hundred of us seated at the prettily decorated round tables in the beautiful dining hall. Then came the toasts on the duties of the doctor, respectively to himself, the public, his family, his fellow-physicians and his patients, it being your secretary's painful duty to respond to one, due to the unfortunate absence of Dr. Bergen of Highland Park, who was kept away by his wife's illness. After a few remarks by the President of the Wisconsin Medical Society, the meeting adjourned.

The following members of our society attended: Drs. Bellows, Billmeyer, Bouton, Foley, Gourley, Herschleder, Jolley, Kalowsky, Taylor, Tombaugh, Watterson and Wright.

W. C. BOUTON, Secretary.

MONTGOMERY COUNTY.

The August meeting of the Montgomery County Medical Society was held Tuesday, August 23, at Coffeen. The following were present: Drs. Wm. H. Cook, F. W. Barry, H. C. Turney, Z. V. Kimball, L. S. Brown, A. A. McBrien, A. W. Lindberg, J. R. Kenton, W. H. Mercer, P. M. Kelly, F. C. Blackwelder, M. W. Snell, G. A. Sihler, Jr., Ross W. Griswold, R. W. Allen, C. H. Lockhart, W. I. Burns, W. C. Hovey, M. D. Irwin and H. F. Bennett.

Captain M. A. Reasoner, Medical Corps, United States Army, was a guest of the society. The minutes of the previous meeting were read and approved.

In the absence of two members of the program committee, the president appointed Drs. Brown and Hovey to act with Dr. Blackwelder in fixing a place and date for the next meeting. The committee recommended that the next meeting be held at Chautauqua Park, September 10, and that the day be devoted to a scientific program, dinner and a day's outing. They also recommended that each member be assessed \$2.00 to defray the expenses of the day. The report of the committee was unanimously approved.

Moved and seconded that a committee of four be appointed to arrange for the picnic. Carried. The president appointed as members of the committee, L. S. Brown, Z. V. Kimball, M. W. Snell and H. F. Bennett.

Applications for membership of A. A. McBrien, Ross W. Griswold and Millard D. Irwin were presented. After being approved by the board of censors, all were elected to membership.

Dr. Chas. H. Lockhart presented the paper of the evening on "The Management of Normal Labor." This paper was a most worthy effort, and we regret that we are unable to publish it in the *Bulletin*. A general discussion lasting an hour and a half indicates the interest this paper aroused. Meeting adjourned.

After the meeting, the members of the society were the guests of the Coffeen profession at a luncheon, which was most enjoyable.

MORGAN COUNTY

The regular monthly meeting of the Morgan County Medical Society was held Thursday, September 12, at Jacksonville, Ill. Dr. A. L. Adams gave a most instructive address on "Sinus Infections," which was amply illustrated by stereopticon views. Dr. Towne of the State School for the Feeble-Minded at Lincoln, was present and spoke of the "Binet System." Dr. J. A. Ogram presented a case of Hodgkins Disease, which is an enlargement of the Lymphatic Glands. This is a disease seldom experienced in Jacksonville.

WHITESIDE COUNTY

The meeting of the Whiteside County Medical Society was held Wednesday, September 11, at Erie, Ill., the general subject of the meeting was on "Diseases of the Kidney." The following is the program: "Indications for Nephrectomy," Dr. Sullivan; "Differential Diagnosis of Coma," Dr. Perry; "Early Diagnosis and Treatment of Chronic Nephritis," Dr. Horner; "Significance of Blood in the Urine," Dr. Keefer; "Relation of Nephritis and Cardio-Vascular Diseases," Dr. Tascher; "Treatment of Floating Kidney," Dr. Beard; discussion was opened by Drs. Farley, Diamond, Johnson and Mathew.

WINNEBAGO COUNTY

The Winnebago County Medical Society opened its fall and winter sessions September 11 in the Nelson House at Rockford. Dr. Anna Weld told of her tour and study visit in Vienna, of the great hospitals there and the vast amount of clinical material furnished both at the hospitals and the free dispensaries.

Dr. Fringer told of the practices of the great London hospitals in the ophthalmic lines and the abundance of material for their clinics.

Drs. Helm and Gill and others recited the methods and practices of American Hospitals. As many physicians had visited the Mayo Brothers at Rochester, Minnesota, the merits of this now world wide institution were fully discussed.

NEWS OF THE STATE

NEWS ITEMS

—The Chicago Lying-In Hospital is to have a new building to cost \$40,000.

—Dr. E. J. Higgins has been appointed county physician of Will County.

—The Elgin Physicians' Club held its first meeting September 8, and has arranged for a busy season.

—The Swedish-American Hospital Association of Belvidere is arranging for a hospital to be built in that city.

—Dr. James Race of Jerseyville was seriously injured by a ferocious bull while separating cattle on his farm.

—Dr. George T. Palmer announces that he will open a tuberculosis hospital near Riverton, which will be partially charitable.

—A hospital for the treatment of consumptives will be opened next month at Belleville. Patients will be treated free of charge.

—Dr. Clarence E. Pierce of O'Fallon, Ill., is in a critical condition from tetanus contracted from a patient who died of that disease.

—It is said that Dr. J. R. Allen of Waterloo, Ill., is being sued for \$10,000 damages by a patient for being burned by an x-ray machine.

—Dr. S. M. Green of Dixon has been indicted by the Lee County grand jury charged with murder and released on a bond of \$12,500.

—A hospital will be erected at Sycamore to be known as the Red Granite Hospital, with a capacity for twenty persons and an operating room.

—Dr. E. E. Gordon has withdrawn as a candidate for coroner of Alexander County, and Dr. Henry A. Davis has been named to fill his place.

—A suit for \$40,000 damages has been filed against Drs. T. W. Bath and W. M. Young, both of Bloomington, the plaintiff alleging malpractice.

—A receiver has been asked for the Sulphur Springs Sanitarium of Peoria, of which Dr. E. W. Oliver is superintendent and Olive M. Oliver is secretary.

—William H. Dyer, a colored man of Lincoln, who graduated from the high school of that city, will enter the College of Physicians and Surgeons in Chicago.

—The will of the late Dr. C. F. Hough of Champaign has been filed for probate. He leaves an estate valued at \$10,000, all of which is bequeathed to his widow.

—The contract for the new Decatur and Macon County Hospital has been let to Baker Brothers of Decatur on the percentage plan of 4 per cent. It is estimated that the cost of the building will be over \$100,000.

--Dr. George T. Palmer, city superintendent of health of Springfield, has gone to Washington, D. C., where he will deliver an address before the American Public Health Association on the subject, "A Diagnosis of a Sick City."

--Dr. J. W. Pettit of Ottawa, gave an address on tuberculosis at the McLean County farm September 11. The object of this was to call attention of the citizens of that county to the necessity of an institution for the care of consumptives.

--A city nurse has been installed in the city hall building at Kewanee and supplied with sheets, pillow-cases and gowns, etc., to be used in her rounds. The first six weeks proved the need of such an office, as she was called 130 times in that period.

--Peter Bartzen, president of the Cook County Board, after investigating the charges that Dr. E. S. Moore, who has been at the head of the tuberculosis hospital at Dunning, had mistreated his patients, accepted the resignation of the physician.

--Dr. J. F. Percy of Galesburg was in Fairfield, Iowa, Tuesday, September 17, where he attended the dedication of the Jefferson County Hospital. Dr. Percy delivered the principal address on the subject, "The Role of the Hospital in the Prevention of Diseases."

--Dr. Carrie Noble White has presented the Urbana Free Library with the medical library of her husband, the late Dr. James S. White, a former Urbana physician, who at the time of his death in Springfield, Ill., was Supreme Medical Director of the Court of Honor.

--Dr. Louise N. Miller, a well-known lady physician of Moline, has filed suit against the Lee family of that city, alleging that they conspired to sell her worthless stock in a banana food company. The bill alleges that Esther Lee was represented as a spiritualist medium who gave messages from the spirit world to Dr. Miller from her deceased husband, advising her to purchase stock.

--A banquet was given Dr. L. R. Ryan of Galesburg, who will leave soon to locate in San Diego, Cal. A large number of the medical men of the city attended and presented Dr. Ryan with a solid gold watch as a token of esteem. Among those who spoke were Dr. Quaife, president of the Galesburg Society. Dr. William O'R. Bradley acted as toastmaster. Others speaking were Drs. J. F. Percy of Galesburg, Becker of Knoxville, and Matheny, Lambert and Stotts.

PERSONALS

Dr. L. R. Ryan has removed from Galesburg to San Diego, Cal.

Dr. L. B. Farrar of Pontiac celebrated his 90th birthday August 29.

Dr. Jay Bacon of Peoria has gone abroad for a three months' vacation.

Dr. Frederick Tice, Chicago, was operated on for appendicitis, Aug. 6.

Drs. Joseph Welfeld and David Horovitz, Chicago, have returned from Europe.

Dr. Isaac A. Abt of Chicago announces the removal of his residence to 4810 Kenwood Avenue.

Dr. Zahn of Roberts Ill., has departed to take a postgraduate course in several medical centers.

Dr. H. V. Dehming of Cumberland, Md., will locate at Graysville in the Dr. Glaze property.

Dr. R. J. Coultas of Mattoon, has purchased valuable business property on Broadway in that city.

Dr. Ross Griswold of Litchfield was appointed a physician for the poor by the County Board of Supervisors.

Dr. and Mrs. Arnold Klebs, formerly of Chicago, but recently of Switzerland, will spend part of the winter in Chicago.

Dr. W. S. Howell of Winnebago has gone to Arizona for the benefit of his health. He has been suffering with a nervous breakdown.

Dr. C. A. Sherman of Laura, Ill., has sold his practice to Dr. A. H. Wadsworth of Chicago, who will take up his practice in that city.

Dr. George Weber of Olney delivered an interesting lecture on "Hygiene" at Grayville, Monday, September 9.

Dr. Harry R. Carson, who has been practicing in Princeton for the last two years, has removed to Hornell, N. Y., where he has accepted a position as assistant superintendent of the Steuben Sanitarium.

REMOVALS

Dr. Secker, of Tolono, has removed to Champaign, Ill.

Dr. L. C. Miller has removed from Rantoul to Champaign.

Dr. J. A. Ross has removed from Moline to Eldridge, Iowa.

Dr. Lawrence R. Ryan has removed from Galesburg to San Diego, Cal.

Dr. George C. Kardon, of Robinson, Ill., has removed to Michigan City, Ind.

Dr. E. C. Park, Jr., has removed from 1208 E. 63d Street, Chicago, to Flora, Ill.

Dr. T. J. Lamping has removed from Moline, Ill., to 435 Greenwood Avenue, Chicago, Ill.

Dr. Philip Hay has removed from Woodstock, Ill., to 60 Washington Square, New York, N. Y.

Dr. Arthur L. Meyer has removed from 3203 Clark Street, Chicago, to 706 Huntington Avenue, Boston, Mass.

NEW INCORPORATIONS

Dr. B. F. Roller, Chicago, \$10,000; maintain a sanitarium. Incorporators, B. F. Roller, C. E. Zimmerman and Jesse Lowenhaupt.

Solar-Pathis Institute and Sanitarium, Chicago, \$10,000; maintain an institute and sanitarium. Incorporators, William McHenry Andrews, Henry Morton and Edwin H. Lee.

MARRIAGES

ERNESTINE DOYCHERT, M.D., and Lionel E. Lawrence of New York City, August 13.

ISAAC JOHN KING, M.D., to Miss Annette Elizabeth Green, both of Chicago; July 25.

WILLIAM S. BOUGHER, M.D., to MARIAN S. WALKER, M.D., both of Chicago, August 28.

WALTER BRADFORD METCALF, M.D., Chicago, to Miss Anna M. Jump of Houston, Del., August 28.

CHARLES OLIVER BULGER, M.D., Greenfield, Ill., to Miss Pauline Smith of Fayette, Ill., at Chicago, August 14.

The marriage of EARL CADDICK, M.D., and Miss Harriet Porter, both of Quincy, took place on July 25, at Burlington, Iowa.

The engagement has been announced of F. M. ROSE, M.D., of Rantoul, to Miss Julia Hess, of Homer, Ill. The wedding will take place September 26.

C. O. BUIS, M.D., of Fairfield, Ill., was married, Sept. 2, 1911, to Miss Ruth Stewart of Lebanon, Ind., they having kept their marriage a secret for almost a year.

The engagement of W. H. WEIRICH, M.D., of Jacksonville, Ill., to Miss Virginia Walker, of Waterloo, Iowa, has been announced. The wedding will occur in October.

JOY RICKETTS, M.D., for three years a member of the medical staff of the South Bartonville Asylum, was married, September 4, to HENRY B. CARRIELL, superintendent of the State Asylum for the Insane at Jacksonville. The wedding took place at Batavia, Ill., at the home of Dr. Daniels.

DEATHS

Mrs. J. D. Colt, wife of J. D. COLT, M.D., of Litchfield, Ill., died suddenly at Buehanan, Mich., September 1; age 72 years.

N. E. SHANAHAN, M.D., formerly a resident of Salisbury, Ill., died at Denver, Colo., August 26, of tuberculosis. He was 43 years old.

B. FLANNAGAIN, M.D., died at his home in Carrollton, Ill., September 3, after an illness of several months' duration of paralysis; aged 72 years.

W. T. BELLOMY, M.D., of Pleasant View, Schuyler County, died at his residence, August 18, after an illness of two years; aged 50 years.

BROCK MAYFIELD, M.D., a retired physician residing near Jacksonville, died Sept. 12, 1912. He was a graduate of the St. Louis Medical College, and had been residing on a farm for a number of years.

C. TAYLOR BALL, M.D., of Decatur, died suddenly at his home, Friday, August 23, of acute kidney trouble. He was born in Batavia, Ill., Oct. 11, 1854, and is survived by his widow, one son and daughter.

The funeral of FRANCIS H. FISK, M.D., who died at Nashville, Tenn., was held at Olney, Ill., Sept. 16, 1912. Dr. Fisk was born at Cincinnati, Ohio, in 1836, and graduated from the Eclectic Institute in that city in 1857. He practiced for a time in Olney.

C. F. HOUGH, M.D., died suddenly at his home in Champaign, September 9, aged 50 years. Death was due to apoplexy. Dr. Hough was born in Martinsburg, N. Y., and graduated from Hahnemann Medical College at Cleveland, Ohio. He is survived by his wife and three children.

W. C. MANLEY, M.D., died at his home in Franklin, Ill., September 10, from heart disease; aged 63 years. He was a graduate of the American Medical School, St. Louis, Mo., in 1879, and has practiced in Franklin ever since. The deceased is survived by his wife and two children.

WARREN H. HUNTER, M.D., of Chicago, chief coroner's physician, died at the West Side Hospital, September 5, from blood-poisoning contracted, it is believed, by infection of his hands through the constant handling of bodies while making post-mortem examinations. He was 45 years of age.

Book Notices

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. With especial reference to the application of remedial measures to disease and their employment upon a rational basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Fourteenth edition, thoroughly revised. Octavo, 984 pages, with 131 engravings, and 8 full-page colored plates. Cloth, \$4, net. Lea & Febiger, Philadelphia and New York, 1912.

Fourteen editions in less than twenty-two years express the appreciation of this work by medical men throughout the world. It is strictly up to date, contains valuable instruction regarding the treatment of syphilis by salvarsan; of aneurism by the silver wire method, and of neuralgias by the introduction of alcohol into the foramen. Hare's work has the advantage of being reliable and appeals to common sense, the best recommendation which could be given a work on this subject.

THE PATHOLOGY OF THE LIVING. And other essays. By B. G. A. Moynihan, M.S. (London), F.R.C.S., Honorary Surgeon to Leeds General Infirmary; Professor of Clinical Surgery at the University of Leeds, England. 12mo of 260 pages. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$2.00 net.

In this small work of 260 pages, Mr. Moynihan considers a number of subjects of vital interest to the medical profession. This is particularly true in his essay on the Pathology of the Living, which will be found to open up a new viewpoint of the consideration of diseases. Members of the State Society could do no better than to read this book through from the first to the last page.

DISLOCATIONS AND JOINT-FRACTURES. By Frederic Jay Cotton, A.M., M.D., First Assistant Surgeon, Boston City Hospital. Octavo of 654 pages, 1201 original illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$6 net; half Morocco, \$7.50 net.

Professor Cotton's work, which embraces only Dislocations and Joint Fractures, is in a way unique, in that it meets this most difficult subject along altogether special lines, and opens a new field for the general practitioner. Dr. Cotton takes a conservative stand on operative treatment of fractures and dislocations but one which must commend itself to those who are looking to the best interests of the patient at all times. Certain it is, that the advice often given "to operate on all fractures" is not good at this time. The book is handsomely bound and illustrated and can be commended to our readers as strictly up to date and reliable.

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ORIGINAL ARTICLES

SOME OF THE ACCIDENTS AND COMPLICATIONS ATTENDING OR SHORTLY FOLLOWING THE EXTRACTION OF SENILE CATARACT *

CASEY WOOD, M.D.

CHICAGO

Although this subject may seem to be hackneyed, yet it must ever continue to be one of prime importance to the ophthalmic surgeon. With all the improvement in technic and with all our increasing experience of various forms of the cataract operation, I cannot imagine a time in which the dangers attending the removal of the lens will not occupy the serious attention of the surgeon.

In this short paper I do not attempt to enumerate all the calamities of cataract removal, nor do I make any effort to present the prophylaxis and therapy of the abnormal conditions described. I would feel grateful, however, if the section members will give us their experience of them.

The causes of most of the accidents and complications that arise during and after cataract extraction are the result not solely of defects in the manipulative skill of the surgeon, but quite as often to lack of control on the part of the patient. Other causes of trouble are undesirable local conditions, immaturity of the cataract, the septic condition of the eye or its appendages, or lack of the usual aseptic precautions. Whatever has determined the unfavorable outcome of an operation it is important that the student learn whether it has resulted from ignorance or carelessness on the part of any of those specially involved in the extraction.

An idiosyncrasy against belladonna in the form of atropin irritation, dermatitis and conjunctivitis, shows itself in swelling of the conjunctiva and roughness of the palpebral skin. It is never accompanied by pain, but generally is attended by some itching and ocular discomfort. It is commonly observed several days after the first instillation of the drug and may be associated with considerable thickening of the skin surface

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

and a seromucous discharge from the eye. It is an alarming sign when it occurs after cataract extraction, especially to one who has not previously encountered it, but is not, fortunately, as serious a complication as it appears. The mydriatic should be changed to duboisin or hyoscin, the dose reduced to the minimum and a simple ointment applied to the roughened lids.

Since the introduction of adrenalin and cocain in extraction operations it is not uncommon after the expulsion of the lens to note corneal areas that have lost some of their protective covering. This result is undoubtedly due to the action of these remedies—especially of the cocain—in softening the anterior epithelium so that even stroking the cornea with the delivery spoon now and then suffices to detach portions of it. As a rule no serious consequence follows this accident, yet it cannot tend to the welfare of the eye and should be avoided by using no more of the local anesthetic than is necessary, by instructing the patient to keep his eyes closed during its action and by avoiding too much pressure on the cornea during the lens delivery.

In passing, let me say that in my judgment, *one drop only* of a 4 per cent. solution of cocain combined with 1 per cent. holocain dropped into the eye every three minutes for fifteen minutes (when the operation should begin) gives the most complete and least harmful local anesthesia for cataract extraction.

It occasionally happens that after the puncture or counter-puncture, the surgeon discovers that he has inserted his knife upside down. It will be found that this accident is variously treated by different authorities. Knapp recommends that the knife should be turned on its long axis so as to entirely reverse its position, and thus to continue the section. I had this exasperating accident happen to me once when using a long and quite thin knife on a deep-set globe, and I was able to follow Knapp's suggestion. On the other hand, I do not see how it is possible with a Graefe knife of average thickness, to accomplish this feat without considerable loss of vitreous and much damage to the cornea. Under these conditions it is better to withdraw the knife and wait until the original wound has healed.

Melville Black has invented a knife intended to meet this contingency. It is the usual cataract knife with a blunt point, which is inserted into the original corneal opening with the proper edge up and the section completed.

In simple extraction the iris occasionally falls in front of the knife. This complication generally arises as the result of improper manipulation of the instrument and usually when the cutting plane has been altered. In most cases it is best to proceed with the operation even though, as a consequence, an irregular form of iridectomy be done.

If I were asked to name a single source for most of the evils following the removal of the lens I would say a too small corneal or sclerocorneal incision. A restricted outlet for capsular and lenticular tissues spells a dangerous traumatism, iridic hernia, secondary cataract, postoperative iritis and other forms of a lingering convalescence. One should make a

sufficient, even a generous, primary incision; and it is better to make it too large than too small.

Experienced operators are generally conscious that they have not made the opening in the eye-ball large enough for the extrusion of a large lens as soon as the corneal incision is complete, but beginners may not be aware of that fact until an attempt is made to extract the lens. When the lens cannot, with moderate pressure, be removed through the opening, it is better to enlarge it with scissors or Black's blunt-pointed knife than to bruise the tissues and detach soft matter by prolonged efforts to expel the cataract.

When the point of the knife is not properly entered to make the puncture, a split cornea is very likely to happen. Of course, this mishap endangers the success of the operation and invites all kinds of subsequent complications. Generally the operator notices the mistake and will be able to withdraw his knife before the anterior chamber is entered.

Another form of "split cornea" occurs when the counter-puncture is made. The point of the knife should be entered a little back of the apparent limbus, as the light refraction gives it the appearance of being thrust farther forward than it really is. When a badly placed section is made in the cornea the wound edges do not heal kindly or properly. Not only is there much operative astigmatism, but a wound infection of greater or less degree is likely to follow.

When too much cocaine has been used, or in aged or weak subjects, a falling in of the cornea may occur, sometimes before, sometimes after, the expulsion of the cataract. At the first stage of the operation it need not embarrass the operator, but if the collapse happen *after* the removal of the lens a good plan is to fill the contracted chamber with warm, sterile, normal salt solution, and this step may be carried out as a part of the irrigation of the anterior chamber after a preliminary removal of cortical remains.

When a conjunctival flap is made there is always more or less bleeding from the severed sclero-conjunctival vessels. This accident, which not infrequently happens, especially if the flap be a large one, is responsible for a most objectionable feature in operations done with a conjunctival flap. I believe that undue bleeding is also the result of prolonged, excessive cocaineization and the too early use of suprarenal preparations. Better avoid the use of adrenalin until the last, or second last, drop of cocaine is instilled. Then the hemostatic effect on the eye will be obtained at the proper moment, and there will be less secondary enlargement of the blood-vessels, which I feel sure almost always follows the use of these styptics.

As a choice of evils it is better not to manipulate the lips of the wound too much in an effort to expel blood from the anterior chamber. After making a conjunctival flap, the whole eye should be gently flooded with warm boric acid solution, and the blood, in all its forms, coaxed out of the eye with "dabs" of cotton or by the use of the anterior chamber syringe. A small quantity of blood in the anterior chamber soon becomes absorbed and does little harm except to obscure, for the time, the intra-

ocular field of operation. Sometimes, however, it becomes organized and forms one variety of after-cataract. In that case the use of atropin is indicated to prevent posterior synechiae and dionin to promote absorption of the deposit.

An insufficient cystotomy is often a serious matter, but may generally be prevented by using a very sharp or needle-pointed cystotome (better the former), entering it carefully and holding it firmly. Sometimes, even with the greatest care, the surgeon may not discover that he has to deal with an unusually tough capsule until the lens refuses to be expelled from its bed. In such cases it is best not to make too many efforts at cystotomy, but to use a pair of capsulotomy forceps provided with very sharp teeth. The instrument of Couper or Tooke will be found effective. If these fail the extraction should be attempted as for the operation in the unruptured capsule; although a hook or some other traction instrument may also be employed—but with care.

In his anxiety to remove as small a portion of the iris as possible, even a careful operator may find after the use of the scissors that he has made a "button-hole" opening in that membrane. This generally follows the seizure of the iris too near its base. He may elect to leave it alone or an iridectomy can still be carried out by passing in a Tyrrell's hook, drawing out the little band of uncut tissue and snipping it with the scissors.

In this connection let me advocate the concentrated artificial oblique illumination for the cataract operation as well as for every procedure that requires the distinct definition of minute details of the cornea and in the anterior chamber. Knapp—our master in the extraction of cataract—employed this method and it is, as you know, part of the equipment of many of the largest eye clinics at home and abroad.

In St. Luke's Hospital, Chicago, for example, we have used the Nernst light in this way with the greatest satisfaction. The isolation and clear definition of minute deposits, of faint opacities and of microscopic fibrils and strands of tissue in the anterior chamber (or deeper) is of signal assistance to the operator.

Prolapse of the iris occurring immediately after the extraction generally means tags of capsule or vitreous between the lips of the wound. A fine, fibrillar, capsule remnant may hold the iris in this fashion and elude the curet or spatula used to free it.

Swanzy recommends the routine search for such capsular, vitreous or cortical remnants. He passes the iris forceps into one angle of the incision and carries it along the whole length of the wound, repeatedly opening and closing it, for the purpose of engaging and drawing out any tags that may be found. When caught, these are pulled out and cut off with scissors. Swanzy, in this way, has found capsule or lens fibers in the wound in about 25 per cent. of all the cases examined by him.

Prolapse, or hernia, of some part of the iridic tissues is more common in the simple than in the combined operation, but in either procedure may be followed by inhealing or incarceration of the iris as a serious after-complication.

When prolapse occurs it almost invariably shows itself during the first day after the extraction. This fact justifies the careful examination of the eye-ball twenty-four hours after the completion of the operation. Then, again, better results probably flow from the immediate treatment of early prolapse, as well in a mere linear adhesion to some part of the wound edges as in extrusion of one or more knuckles or folds of iris.

The causes of prolapse are chiefly injury to the parts, or any violence that may reopen the wound. Sneezing, coughing, straining at stool and vomiting are among these, as well as accidental blows on the dressings, finger thrusts, squeezing of the lids, sudden movement in or out of bed and undue pressure of the bandage, mask or shield, etc. Sometimes the normal intraocular pressure exerted by the mass of the vitreous on the iris appears to be the only explanation of some forms of prolapse.

Extreme care should be exercised in removing the dressings at the first few inspections of the eye following an extraction, because, as Swanzy and others have shown, the iris may be washed or pushed into the wound by the sudden outflow of aqueous induced by the opening of the lids and the consequent disturbance of the wound edges. This fact brings home to one the reasons for the numerous operations devised by operators to provide such a sluice-way (iritomy, iridotomy) for the escape of aqueous as will permit effective drainage without carrying the iridic tissues with it. It explains the more frequent occurrence of prolapse in the simple operation, as well as the value of the conjunctival flap in all cataract operations.

Escape of vitreous at any stage of cataract extraction generally means rupture of the capsule, hyaloid membrane or suspensory ligament, combined or not with a fluid vitreous and increased ocular tension.

The pressure that excites it may, however, be external, such as by the lids, fingers, dressings or instruments. Sometimes the contraction of the straight muscles may be responsible for the accident.

Sometimes the vitreous may present between the lips of the wound without actually entering it or without any subsequent escape of the fluid.

Loss of vitreous most frequently attends or follows the delivery of the lens, although it may take place as soon as the opening in the eye-ball is large enough for its exit. It rarely occurs during the healing of the wound or after it has closed.

If the counter-puncture be too deep, or too peripheral a section has been made, the zonula is deprived of its usual support and loss of vitreous is all the more probable. Prominent eyes, as in high degrees of myopia or exophthalmus, are more liable to this accident than those normally set, mainly because the lids, in contracting, have a greater purchase on the globe.

The most common immediate causes of vitreous loss are spasms of the orbicularis brought about by anything that makes the patient "squeeze up" the eye; too marked use of the fixation forceps; undue pressure on or dragging of the capsule forceps or cystotome; a prolonged or too rapid section; an unexpected upward rotation of the eye when an instrument

is in the anterior chamber and too much force employed in an attempt to expel cortical matter or capsular remnants.

Postoperative iritis, especially its severer forms, is probably always associated with irritation or inflammation of the rest of the uveal tract. It varies greatly in intensity, from the simple form, due to mechanical irritation of the iris from retained lens matter, to the most pronounced cases in which direct infection is the evident source of the inflammation.

Among other causes are too long or too forcible irrigation of the anterior chamber, or lavage with any fluid but sterile, dust-free, normal salt solution at the body temperature, operative traumatism, such as occurs in tearing or bruising the iris with dull instruments, forcible expression of the lens through a too small section and dragging on the iris by the forceps when the patient suddenly rotates the globe; injury to the eyeball during careless nursing, by a badly fitting mask or dressing, by a finger thrust or by some injury received during sleep; finally and more rarely, as part of the recrudescence of a diabetic, syphilitic or rheumatic process.

The symptoms of iritis generally set in several days after the operation — the later the milder. The disease persists for a variable period, most cases recovering under atropia, hot applications, Credé's ointment and diosmin.

Postoperative iridocyclitis may generally be regarded as a more pronounced form of infection than that just described, and is, as a rule, followed by loss of useful vision. Cases present, within twenty-four hours after the extraction, the symptoms of acute iritis soon followed by marked evidence of an intraocular inflammation, i. e., a blurred, swollen iris with exudates at its margins.

In spite of all treatment (which is substantially that suggested in the severer forms of iritis) the pupil generally fills with fibrinous masses, there is an updrawn pupil and, finally, an *iris bombé*. Now and then, however, the eye becomes quiet and some form of iridotomy may eventually be instrumental in restoring a fair amount of sight.

In spite of our boasted improvements in aseptic and antiseptic surgery, infection of the operative wound remains the most serious complication of cataract extraction. Although, as in advanced anemia, arteriosclerosis, lachrymal disease, etc., one is obliged to run certain unavoidable risks, yet microbial invasions of the incision are, after all, the *bête noire* of the surgeon. The occasion may vary from the moment of the puncture that opens the anterior chamber to weeks or months after the operative wound has healed, but the admission of bacteria or toxins, or both, to the interior of the eye will generally account for the majority of postoperative disasters. It is not intended to deny the verity of endogenous infection or to minimize the lowered resistance of the tissues that is not infrequently encountered in old people with nephritic and other organic changes, but these facts should not be allowed to cloak a more important factor — septic infection.

The most common predisposing causes of bacterial invasion are prolapse of the iris, prolapse of the vitreous and the incarceration of portions

(however minute) of these and other tissues between the lips of the wound. Such accidents, as well as an irregular corneal cut, prevent that clean, smooth and early adhesion of the incisional margins that is the best guarantee of a successful operation.

Suppuration of the external wound is by far the most serious calamity that can involve the eye operated on, as it almost always terminates in panophthalmitis and complete loss of sight. Following the rule of dangerous postoperative infections the involvement of the eye shows itself within a few hours after the patient is put to bed, and the signs of the accident are quite marked. The pain in and about the eye is severe, the swelling of the upper lid is pronounced, the globe is very tender, the secretions are copious and the cornea is decidedly steamy. The wound margins sooner or later become swollen, whitish-yellow and exude a purulent discharge. Hypopyon is seen and the anterior chamber soon fills with the exudate. In spite of all treatment the invasion of the cornea and iris continues and most of the former melts away as a part of the destructive process. At last, the vitreous is infected, the wound opens widely and the picture of panophthalmitis is complete.

Finally, the mental balance of old people is especially prone to be disturbed by putting them in a dark room of a strange hospital, to say nothing of the anxiety connected with a serious operation.

The majority of insane patients recover under sedatives and judicious moral suasion. In every case the condition of the bladder, bowels, urine, blood, etc., should receive attention. Care should be exercised to prevent a temporarily insane patient from tearing off the bandages and otherwise injuring his wounded eye.

DISCUSSION

Dr. H. W. Woodruff, Joliet, Illinois: As Dr. Wood has said, this subject is a very extensive one. There are so many points to be taken up and considered that I hardly know which particular one to speak of. The doctor referred to atropin conjunctivitis. I have never seen a case of atropin conjunctivitis in connection with a cataract operation except rather late, after atropin has been used for so long a time it was scarcely necessary to use it longer. My idea of atropin conjunctivitis has always been that it was an acquired condition, and I still hold to this idea: that is, if I was using atropin in a patient's eyes and he should develop atropin conjunctivitis at once after a few drops of atropin, I would think that atropin had been used in his case perhaps many years before. I remember more than one instance in which I used atropin for weeks for an interstitial keratitis that atropin conjunctivitis occurred; and then years after when refracting this case one drop of atropin would bring about this same condition. So I think possibly a condition of that kind may account for atropin conjunctivitis in some cases.

Just one other point, because I have a very pronounced conviction on the subject, having gotten this by actual experience, and I have spoken of it many times before, and that is sub-conjunctival injection treatment of infection following the extraction of a cataract. A number of years ago I lost a case from infection. My attention was called to an article in the *Annals of Ophthalmology* by Bourgeois on treatment following infection after cataract extraction, and he cited six cases in which he had used this treatment with such remarkable results that I took very careful notice of it and the next time I had an infection I used it. I would like to tell you about all of these cases of infection and the results that I obtained with the use of this solution, which is cyanid of mercury. Knapp said not all

cases that looked like infections are really infective cases, but you cannot afford to wait to determine that point always, so this first case I relate possibly might not have been a true infection. This man was operated on by simple extraction. The day after the operation I examined the eye and found some faint signs of exudate in the pupillary area and also in the anterior chamber. With this experience of Bourgeois in mind in the treatment of infection, I went to the drug store and got a solution of cyanid of mercury, 1/1000 and returned to the hospital. At 11 o'clock in the morning I made the injection, subconjunctival, a deep injection, deep in Tenon's capsule. I examined that eye again at 4 o'clock in the afternoon. There was no increase in the amount of this exudate, but I made another injection just the same. The next morning—twenty-four hours after the first injection—there was no evidence of exudate in the anterior chamber.

I have had a number of those cases, and some of them so positively cases of infection that there was no doubt about it.

I will cite another case. This was in a man who had had dacryocystitis, which I treated before venturing on the operation. I operated, of course, with the fear of infection constantly before me. The next morning when I went to see him, he immediately sat up in bed, pulled the bandage off his eye, and said, "Good morning, doctor." I said, Well, if he has not already acute infection he is in line to infect himself. I removed all the bandage and there was a clear case of infection present, an exudate in the anterior chamber and a circle of exudate in the cornea. Here there was no mistake about this, and I injected him in the same manner as the previous case, and that man made an absolutely perfect recovery. There was no cloudiness of the cornea and the result was as perfect as if he was never infected.

Dr. Willis O. Nance, Chicago: Many of the accidents attending operations for cataract can be avoided by giving careful consideration to five or six details. The first important point is sufficient—which usually means efficient—anesthesia. As to the method that can best be obtained operators differ. Dr. Wood prefers cocain and holocain. Personally I almost invariably use the cocain solution, and I find that the amount of cocain and the length of time it should be applied varies considerably in individual patients. Without proper anesthesia no operation for cataract can be successful, and complications are very apt to occur at the time of the operation.

Second to efficient anesthesia is adequate light, especially when performing an iridectomy, and I take it that most of us in performing operations for cataract perform iridectomy. I do almost invariably. I began operating that way and I never felt that I was a sufficiently experienced operator to forsake this method for the simple extraction. Occasionally, however, I do a simple extraction, but it is very seldom. I believe the operation by iridectomy is by far the safest procedure.

Third is the corneal incision. Dr. Wood has mentioned the dangers of a too small corneal incision. Many years ago when I was a student of Dr. Hirschberg, in Berlin, he was demonstrating operations for cataract on living rabbits. He dwelt upon, and preached, and insisted upon a large corneal incision, and I have never forgotten the lesson. I remember well the question came up as to how much of the circumference of the cornea could be included in the incision without danger of necrosis, and his reply was, "You can safely remove three-fifths of the cornea without fear of necrosis." The incision must be made large enough.

Fourth is the matter of the cystotomy. I think it is an excellent idea to test the sharpness of the cystotome every time it is employed. We may find the point slightly blunt in which case the capsule may not be ruptured and we will have difficulty in removing the lens.

Fifth, gentle but firm pressure is required for removing the lens. Repeated stroking of the cornea cannot but do damage to the eye; but firm, and at the same time exceedingly gentle pressure is indicated, and if the incision is sufficiently large and the capsule well ruptured, the lens will come out with very little trouble.

Sixth, care must be taken in the toilet of the wound. The question of light is important at this stage. If we do not have suitable light we may leave shreds of iris in the wound, with the result of which we are all familiar.

Seventh, the question of bandaging. It is exceedingly difficult to apply an eye bandage so it will remain in place and at the same time exert no undue pressure on the eye-ball. Early in my operative work I put bandages on too tightly. I am satisfied in some cases it had a tendency to prevent rapid or uniform union of the corneal wound.

Next comes the question as to when the eye should be examined. Dr. Wood has alluded to the teaching of Smith, which is substantially to the effect that the bandage should be left on ten days without examining the eye. I believe that to be an exceedingly unsafe procedure. I invariably make an examination of the eye within forty-eight hours after the operation.

When infection occurs, which is not very often these days, the best treatment I have employed is that just recommended by Dr. Woodruff, of injection of cyanid of mercury into the orbit. I have seen cases of infection, in which one or two, or possibly three injections of cyanid of mercury into the orbit have unquestionably saved the eyes. Before the adoption of that method those eyes would have been lost.

Dr. George F. Suker, Chicago: Dr. Wood has so thoroughly covered the ground that one can add but incidental facts. The inordinate use of cocain in operations for cataract is to be deprecated as it is very liable to cause a collapse of the cornea, a complication not overly desirable.

I wish to suggest the use of adrenalin two or three times a day, for two or three days prior to the operation in order to determine the presence or absence of ocular vascular sclerosis. If arteriosclerosis is present then do not use the adrenalin at the time of operation as it favors latent hemorrhages and causes an excessively prolonged anemia and induces local wound necrosis.

The size of the incision is an important one. It is far better that the incision be too large than too small. It is crowding the lens through a relatively small corneal section that causes undue injury to the iris and adjacent ciliary bodies and processes.

In regard to the use of the cystotome, I agree with what Dr. Wood has said, but I much prefer the use of the capsule forceps. With them, one can better remove a larger piece of the capsule and thereby insure a smaller percentage of secondary capsular cataracts. It is the shredding of the capsule by the cystotome and the non-delivery of these, during lens delivery, which fall into the filtration angle, obliterating the same and thereby causing glaucomatous conditions. The larger the piece of capsule removed the better.

Dr. C. F. Burkhardt, Effingham: I only wish to ask a question. I have had very little experience with cataract operations, but owing to the fact that cocain is so destructive to the cornea, I would like to ask Dr. Wood what his experience has been with novocain.

Dr. Casey Wood (closing the discussion): We have at St. Luke's Hospital one form of light for the ophthalmic and another for the general surgeon. The latter, who depends mostly upon direct illumination, seems to prefer a double cylinder, each provided with a strong convex lens so directed at an acute angle that a single round sphere of light is directly thrown upon the field of operation. This device furnishes a very brilliant illumination, but it is too strong for eye work, for which a single cylinder and the oblique illumination is preferable. In the latter case there are no uncomfortable reflections from the cornea and the patient does not suffer from too much light. I have never seen uncomfortable heat from this light because it is placed high, say twelve inches from the eye.

I would like to emphasize the importance of making a personal examination of the eye the first day or so after the ordinary cataract operation. I would advise operators against allowing interns or nurses to make these early examinations of the eye, because if not properly done, there is much risk of damage, especially to the partially healed corneal wound.

As to the use of cocain and its evil effects, I tried to emphasize in my paper that there should be only one drop of the solution used at a time, every three minutes for fifteen minutes, five drops in all—never more. What is the use of instilling more than a single drop into the conjunctival sac? If more than one drop be used it does not remain in the sac. The temptation is, of course, to flood the eye with the anesthetic in the hope of increasing the effect.

I have had some experience with novocain and do not like it. I do not think it produces deeper, or better or longer anesthesia than the mixture I have mentioned; also, it is very irritating. I prefer the hydrochlorate of cocain; but, then, I have had very little experience with the nitrate.

THE USE OF A CONJUNCTIVAL FLAP IN PERFORATED WOUNDS OF THE GLOBE (WITH DIAGRAMS ON THE BLACKBOARD)*

GEORGE F. SUKER, M.D.

CHICAGO

(AUTHOR'S ABSTRACT)

One of the most important recent advances in modern ophthalmic surgery has been the promulgation of the conjunctival flap in an endeavor to save eyes which received extensive perforating wounds. Though this work on the conjunctiva received considerable attention at the hands of Schoeller in 1876, yet it fell into desuetude until Kuhnt revived it in 1884, with slight modifications. Therefore, all honor and glory in this regard belongs to Schoeller, but is also shared to an extent by Kuhnt and da Gama Pinto.

This conjunctival flap is made as follows: At the site of injury or in the most immediate area, the conjunctiva is dissected loose a requisite distance beyond the lateral edges of the wound. It is next dissected loose backwards as far as it is deemed necessary—depending on the size of the wound to be covered. You either dissect the conjunctiva half way around the corneal circumference or less. If less, then make a flap by two vertical incisions, one at either end of the limbal cut. The flap is now stretched over the lesion and fixed by sutures into the conjunctiva on the opposite side. Several sutures are necessary, in fact the flap is simply anchored as it were to the conjunctiva on the opposite side. The sutures pass through a fold of the conjunctiva.

In this way either the whole or a portion of the cornea is covered. The sutures are removed within four or five days.

You proceed in a similar manner for scleral wounds. If scleral wounds are so situated that you can obtain a flap on both sides of wound, then you can have one flap overlap the other and thus obtain a very strong support. In such instances you follow more or less the technic of a McReynold's pterygium operation.

By means of this flap, a class of cases involving the cornea and adjacent sclera, which heretofore meant either a permanently irritable

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eye or an enucleation, are no longer sacrificed. Furthermore, a class of cases entailing either a total or partial loss of corneal substance, because of injury or disease, which heretofore necessitated enucleation or one of its substitutes, need not any longer be thus sacrificed; the same is true of extensive wounds of the sclera. The prolapsed portions in either case are amputated before covering the wound with this flap. Necessarily this mode of saving a globe is not available when the foreign body cannot be removed or extensive infection of the interior wound has already taken place.

Staphyloma, either scleral or corneal, are in particular unsatisfactory cases to treat; first, because of their progressive nature; secondly, because our surgery heretofore was inadequate either to correct or stay the condition. These need no longer give us great concern, because this conjunctival flap offers an efficient and permanent remedy; the staphyloma is nearly removed in toto and the heavy conjunctival flap brought over and fixed.

It is needless to remark that perforative corneal conditions, from whatever cause, have been and always will be a subject of the greatest solicitude to the ophthalmic surgeon. One need only read the disastrous results which follow these perforations—iris prolapse, if nothing more—what difficulties one has to overcome in this class of cases in order to get “support” and promote union. How often, in spite of our resourceful efforts, are staphylomatous conditions but the end-results of our endeavors.

Corneal fistulæ, which at times prove very obstinate, yield readily to this conjunctival flap.

This conjunctival flap is particularly applicable in dealing with scleral wounds. Norman Hanson very tersely states two axioms for this flap, when one deals with extensive wounds of the sclera: 1. It is a protection against infection. 2. It furnishes the only means by which uniform pressure is secured, thereby insuring the exact juxtaposition of the sclera, retina and chorioid. This latter is not achieved when scleral sutures are resorted to, inasmuch as they necessarily cause by their insertion a separation between chorioid and sclera. When large areas of scleral tissue are sacrificed it is not advisable to attempt to suture the wound with catgut and then put the conjunctival flap on top of this; but it is better to depend on the latter alone, which, under these circumstances, must be rather large and thick. Furthermore, any prolapse of vitreous or uveal tract must be previously amputated.

The ever-advancing and sloughing corneal ulcer, whether of the serpiginous type or not, offers a large field for the application of this flap. If the base of the ulcer be curetted, the edges vivified and a flap brought over, being well pressed into the ulcerated areas, results well nigh marvelous, are the recompense. Should the cornea perforate in these cases, it is an impossibility for the iris to prolapse as the anterior chamber is immediately restored. The iris, if prolapsed, is excised and freed from its attachments to the edges of the perforating wound. The progress of the ulcer is effectually checked and many times economic vision restored, upon later resorting to an optical iridectomy.

This flap is especially of great service in such cases, where from intra-ocular inflammations of the non-malignant type, or from conditions akin to gonorrheal ophthalmitis, large perforations of the cornea take place and the eye is in danger of being lost because of the various prolapses of its contents. In such cases, the eye must be carefully manipulated and the flap so placed that drainage is not altogether thwarted. If in these conditions, the anterior chamber be filled with Haab's iodoform rods or simple iodoform powder, you will be surprised at the satisfactory results. It is advisable before inserting the powder or rods to have the flap *in situ*, but not firmly fixed.

Goldzieher and Kuhnt have even used this flap for the protection of the cornea in gonorrheal ophthalmia after perforation has taken place and to prevent the extensive ingress of intraocular infection. They cover the whole cornea by means of two flaps, one from each side, which overlap and are fixed at the ends. This suggestion is particularly indicated when the cornea is threatened with annular serpiginous ulcers which are prone to perforate — I myself have employed this flap in several cases of this kind.

This conjunctival flap may at times be of service in combating extensive central corneal conicities. Instead of cauterizing according to the Elschmig method, the apex is excised and the flap brought over. This is advised only for aggravated cases. Much more support is offered to the cornea in this manner than by any other method and the resultant acuity of vision is at least equivalent if not greater. An optical iridectomy is in most instances obligatory after any measure intended to overcome the conicity or staphyloma. If this flap is not too broad or thick and has been properly placed, the optical iridectomy need not be any larger than for the other conditions demanding such an iridectomy.

The length of time consumed before the transplanted conjunctival flap becomes uniformly cicatrized varies under circumstances from about four weeks to six months. This, no doubt, depends largely on the vascularization which at times is quite marked. If too much time is consumed for this purpose, then the part projecting beyond the implicated corneal area and extending to the conjunctival base may be removed. This can be done after the manner of removing a pterygium. The flap is, in fact, nothing else than an artificial pterygium. On the other hand, the adherent flap can easily be tattooed.

In using the flap especial care must be exercised that sufficient allowance is made for its shrinkage; and, in every instance, the flap must be well fitted into the part which it is to cover. If the parts are thoroughly cleansed and freed from any blood or serum, both the corneal area and the under-surface of the flap, primary adhesion is quite intense and rapid. At times, a stay suture (depending on varying circumstances) may be necessary. This is then passed through the base of the flap and fixed at a point in the conjunctiva directly opposite. It may be removed within thirty-six to forty-eight hours, that being ample time for union to have taken place.

This, in brief, gives an adequate idea of the extensiveness of the applicability of the conjunctival flap. That it is not a panacea for all the conditions mentioned, goes without saying, neither is it in any sense a *sine qua non*.

Rarely, if ever, does this flap slough or ulcerate. If it does, then the causative conditions underlying it are general rather than local. For, as far as local conditions, such as infecting bacteria, tension in flap, undue pressure, etc., are concerned, they can be controlled. Again, it is advisable to have at least one or two blood-vessels coursing uninterruptedly to the very apex of the flap. With the blood-supply assured, and the flap of requisite size, the untoward results are greatly minimized.

If the flap properly overlaps the involved area, and if the edges of the flap are not allowed to roll up on themselves, particularly so on the under surface, the operation will not be a failure. So also does the thickness of the flap play an important rôle; this depends largely on circumstances and conditions to be achieved. Usually, a flap that is thin at its apex and gradually increasing in thickness toward the base, is the desirable one. Then, too, the under-surface of the flap must be free from hemorrhages or clots and the part to which it is applied must likewise be in a similar condition. In other words, the exact principles one follows for skin-grafting are to be observed. The flap must at all times be fairly well stretched to avoid any puckering or rolling up of the edges, and the eye must be so firmly bandaged as to insure practical immobility.

From the foregoing one can readily see that certain precautions are to be observed in employing Kuhnt's conjunctival flap. Yet, no one surgical intervention on the cornea or conjunctiva has such a large field of usefulness as this flap when properly made, in the class of cases for which it is indicated.

To briefly summarize, this flap is applicable in:

1. Extensive wounds of the cornea and sclera with or without loss of substance in either, or prolapse of ocular contents.
2. Corneal fistulæ.
3. Serpiginous or perforating corneal ulcers.
4. Corneal or scleral staphyloma.
5. Prolapses of ocular contents.
6. Hernia of the iris.
7. Extensive conical cornea.
8. Untoward conditions in wounds following cataract extraction and the like.
9. As a protection for the cornea in conditions similar to gonorrheal ophthalmia, in which extensive perforations and resulting intraocular infections are liable.

DISCUSSION

Dr. Willis O. Nance, Chicago: As Dr. Suker has stated, there is no new principle involved in this procedure. Personally I have employed it for the last five years and invariably use this method in the management of peripheral perforating injuries of the cornea. I, however, never cover the entire cornea with a conjunctival flap. I never have treated central ulcers of the cornea or ulcers in that vicinity by this method, preserving it for those at the limbus or near the limbus.

I fancy it would be exceedingly difficult to loosen up a sufficient amount of conjunctiva to cover the entire cornea especially if one depended upon drawing it over from one side.

The principle of the operation is absolutely correct and it works out beautifully in practice. It is by far the best procedure with which I am familiar in the management of peripheral corneal perforating wounds, and I invariably employ it. As to the question of employing it in cases of gonorrheal conjunctivitis I would not be inclined to do it. I would not consider it a good surgical procedure to cover the entire cornea with conjunctiva or anything else that would prevent an unobstructed view of that tissue. Of course a cornea that is perforated does not by any means necessarily mean the loss of the eye. We all have seen numerous cases of corneal perforations where the eye recovered with very good vision and I certainly would hesitate before covering the whole cornea or a large part of it in cases of infection by gonococci.

Dr. Richard J. Tivnen, Chicago: Relative to the point Dr. Nance made about the difficulty of drawing the conjunctiva over from this point to this (indicating on blackboard) and suturing it, I had a case some years ago of rupture of the sclera about this point. I dissected the conjunctiva around the entire circumference of the cornea and made a pursestring suture. In that case I had no difficulty.

In regard to Dr. Suker's suggestion of covering over an ulcer complicating a gonorrheal infection, I must say I agree with Dr. Nance, I would be fearful of covering the site of such an ulcer in this manner.

Dr. H. W. Woodruff, Joliet: While I have had some experience in using the conjunctival flap for the cornea, I have also had clinical experience that shows that the doctor's reasoning is after all sound; perhaps others may have had the same experience in gonorrheal conjunctivitis in the adult. I recall distinctly a case in which the only part of the cornea which remained clear following the inflammation was a part above which was covered by the swollen conjunctiva and when the eye recovered I had no clear cornea except this part which had been protected by the conjunctiva.

Another thing occurred to me while Dr. Suker was explaining his operation and that was I would like to have him say something as to whether he thinks the idea is feasible in cases of symblepharon in which the operation of skin grafting is necessary. To protect the cornea from the plate by these conjunctival flaps. Of course, you could not do it at the site of the symblepharon, but supposing the symblepharon involved the lower portion and the rest was free, would it be possible to do that?

Dr. Suker (closing the discussion): In reference to the question of symblepharon, there is no objection to anchoring the conjunctiva from above or below as suggested by Dr. Woodruff. You can leave the conjunctiva fixed a week or ten days and if one suture tears, replace that suture and then at the time you think justified, remove the sutures and the conjunctiva will retract voluntarily. The next case of symblepharon I have, I certainly will try this suggestion. The idea is a very good one.

THE SIGNIFICANCE OF ARTERIOSCLEROSIS IN THE FUNDUS OCULI *

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CHICAGO

One need scarcely apologize for presenting the subject of arteriosclerosis before any medical body. A pathologic condition whose etiology is accredited to syphilis, typhoid fever, nephritis, malaria, diabetes, gout, lead poisoning, alcoholism, nicotin poisoning, overeating, intestinal auto-

* Read before the South Side Branch, Chicago Medical Society, March 26, 1912.

intoxication, cardiac disease, and the whole system of wrong living popularly described as the "strenuous life" (without exhausting the list) cannot fail to be of interest to every physician; nor can we regard recent evidence of the Egyptian mummies as a relief from the problem.

Again, the early evidence of a beginning degeneration of the arterial system, with its prophecy of general physical and mental decay, is essential to preventive therapeutics. The layman can recognize an advanced arteriosclerosis when permanent injury has been suffered by brain, heart, or kidneys; but the symptom-complex of beginning arteriosclerosis is more elusive and more important. Modern life involves for many of the population long working hours indoors, a minimum of exercise in pure air, an environment of hurry, noise, and anxiety in regard to financial success, disturbed sleep, unwholesome food; in short, unceasing demand on the human organism for more labor, whether it be called work or play, than it can safely perform. The threadbare maxim that a man is as old as his arteries comes to the attention of the physician daily when he sees prematurely old men and women keeping up with difficulty the pace which was formerly easy. The hopeful phase of this situation is the possibility of recognizing the disease early and regulating the patient's habits so that the progress of the arterial degeneration may be checked and life and efficiency be prolonged in comfort.

It is the ophthalmologist's fortune to be able to study the circulation in the retina as it can be studied nowhere else in the entire organism. The blood-vessels lie before his eye with nearly or quite transparent media intervening. The retinal arteries are end-arteries, peculiarly susceptible to the influences of hypertension and of circulating toxins with the consequent degenerative processes in the vessel walls. Their proximity to the cranial cavity enables the observer to estimate with a degree of accuracy the status of the circulation in the brain, where the effects of arteriosclerosis are necessarily of greatest import. We know that arteriosclerosis is at first a more or less localized condition, and at any stage of the disease some localities exhibit more advanced sclerosis than others. The retinal vessels, more often than not, are the seat of early and extensive sclerotic changes, and their appearance may be pathognomonic when the stethoscope, the palpating finger, and the sphygmomanometer do not elicit the classic symptoms of the disease. Therefore the general practitioner may be interested in the problem of arteriosclerosis from the standpoint of the ophthalmologist, who often has the first opportunity to discover the disease.

The individual who wears glasses for the correction of an error of refraction, and who consults the ophthalmologist periodically for a change of lenses, probably learns of suggestive signs of arteriosclerosis in the retinal vessels and is referred to his family physician for general treatment before the latter has occasion to look for such disease. A larger group of patients are those who have overcome a greater or slighter ocular defect in youth, but who with advancing age can no longer maintain this strain with comfort. Disappointed with their own, or an optician's, correction for presbyopia, they seek the ophthalmologist's aid. They

complain of blurred sight, diminished vision, undue sensitiveness to light, itching or burning of the lids, eye pain, headache, or many vague symptoms of nervous strain, all due to errors of refraction; or perhaps they merely want lenses which will enable them to read a book or thread a needle at close range, instead of holding objects at arm's length as uncorrected presbyopia necessitates. A very practical consideration is that the man or woman at 40 or 45 years of age is brought to the ophthalmologist for one or more of a great variety of complaints, arising or growing intolerable at this time of life when arteriosclerotic processes first show themselves and when rational hygienic and medical advice is of inestimable value to the patient.

On inspecting these eyes, one observes occasionally the arcus senilis, a gray ring in the cornea, near its periphery and concentric with it. This is a degeneration of the corneal tissue, occurring with age, but too variable in its onset to be of diagnostic importance. With oblique illumination one is impressed by the general cloudiness of the crystalline lens, or its differentiation into sectors. This is a sclerotic change, an exaggeration of the firmness which the lens ordinarily begins to exhibit in middle life, and on the other hand a mild degree of that loss of transparency which we designate as cataract, though happily the degree of opacification denoted by the term "cataract" never develops in the majority of these cases. With the ophthalmoscope one sees the retinal arteries and veins branching throughout the retina from the optic disk as a center at which the arteries are given off from the central artery of the retina, a branch of the ophthalmic division of the internal carotid, and the veins empty into the central vein of the retina which is tributary to the ophthalmic vein. Normally the retinal vessels are translucent, of uniform caliber, and reveal no pulsation. One frequent exception is noted, however, in the pulsation of one or more branches of the central vein where it enters the nerve. With the hyperemia attendant on eye strain such a venous pulsation is by no means unusual. Arterial pulsation may be produced by pressure on the globe, but otherwise is a pathologic appearance. With the loss of elasticity in the arterioles and the development of connective tissue chiefly in the inner coat of the artery walls, which is the essential feature in the pathology of arteriosclerosis, in the minute retinal vessels, certain logical alterations in the normal fundus picture occur. These alterations have been described by many writers, and most completely in America by de Schweinitz¹ of Philadelphia, from whose writings I quote freely.

The central light streak on the arteries becomes more distinct, and the entire breadth of the arteries is of an unusually light color. The translucency of the arteries is lost, so that one no longer sees an underlying vein beneath an artery. White stripes appear along the course of arteries, indicating degeneration of the walls and infiltration of the perivascular lymph-sheaths. Instead of a fairly straight course, the vessels exhibit tortuosities, especially the fine arterial twigs far to the periphery

1. Text-Book on Diseases of the Eye, and quoted in Duane's Translation of Fuch's Ophthalmology.

of the fundus, which are often cork-screw shaped. One must remember, however, that sinuous vessels are frequent congenital peculiarities, and by no means rare in exaggerated cases of retinal hyperemia which accompanies errors of refraction; and, therefore, are of pathologic significance only in conjunction with other appearances of arteriosclerosis. Ordinarily hypertension accompanies sclerotic changes and we find the optic disk of a dull red color, the veins on the disk pulsating strongly and somewhat engorged throughout the fundus. Such may be regarded as a picture of early arteriosclerosis.

With further progress of the sclerosis, we find greater tortuosity and irregularity in the caliber of the vessels. The arteries may pulsate, and they present a beaded appearance, being obliterated in places and finally may be converted into white threads, "silver-wire arteries." The veins, too, present irregular dilatations and contractions, and are flattened out where crossed by arteries. Peripherally to the crossing the venous stasis results in bulging of the veins which may give an ampulliform enlargement, while for a short distance centrally to the crossings the veins are partly or completely obliterated. Sclerotic changes occur in the vein walls as in the arteries. With the mechanical obstruction to the outflow of the retinal circulation, we observe unevenness of the surface and grayish coloration indicative of edema of the retina. Obviously increased blood-pressure in highly sclerotic arteries will cause hemorrhages, which appear as flame-shaped, striate, or irregular red masses anywhere in the fundus and, absorbing, leave pigment deposits about white areas of retinal and chorioidal atrophy.

Needless to say, such profound circulatory disturbance involves the nutrition of the retina and causes impairment of vision, varying from the cases of nearly or quite normal sight for a few moments followed quickly by a sense of dimness due to tire, which is but part of the general exhaustion of the too easily tired victim of arteriosclerosis, to the cases of more or less complete blindness from extensive hemorrhages throughout the fundus, especially when they encroach on the macula. Hemorrhages into the eye at times raise the ocular tension producing glaucoma, which is distressing on account of the severe pain it occasions as well as the destruction of sight. Therefore, we must regard arteriosclerosis of the retinal vessels as of the very gravest significance in respect to vision.

Moreover, hypertension and sclerosis augment the danger attendant on surgical procedures on the eye. To the possibility of expulsive hemorrhage with its usually disastrous outcome after eye operations is to be added the slow and imperfect healing in persons with the defective nutrition which accompanies such vascular changes. The knowledge gained by the fundus examination in an eye with incipient cataract may deter the surgeon from attempting what would be an unfortunate operation for the removal of a more mature cataract in the fellow eye. Several months of judicious treatment of the hypertension has been followed in such cases by a smooth operation with good visual result, and moreover has in all likelihood forestalled cerebral hemorrhage. It seems not unreason-

able to suppose that such knowledge of the vascular condition may be of value to the surgeon contemplating operations on other parts of the body.

The significance of ocular findings with reference to the general health has been a matter of interest to ophthalmologists since the invention of the ophthalmoscope in 1851. In 1869 Berthold² wrote on retinal hemorrhage as foreboding cerebral hemorrhage. Bull³ discussed the same subject in 1874; and in 1889 Raehlmann⁴ wrote exhaustively on the subject of retinal disease in relation to general arteriosclerosis. Yet so slow was the reception accorded this diagnostic method, that as late as 1890, Gowers,⁵ an exceedingly careful observer with a vast experience, said "Chronic changes in the vessels rarely reveal themselves by retinal signs." More recently, however, much has been written on the subject, and post-mortem findings have given positive information, especially in respect to the associated vascular disease of the retina and the brain, of whose nervous tissue the retina is to be regarded as an expansion. Geis⁶ has recently reported the results of his study of 250 cases from Uhthoff's clinic in Breslau. He learned that, with arteriosclerosis of the retinal vessels microscopically proved, there is always a similar condition of the basilar brain vessels, and often localized softening of the brain tissue as well. On the contrary, he sometimes found an arteriosclerosis in the basilar vessels when there was less, or no, change in the retinal vessels. So we may infer that the process in the brain vessels is equally advanced or more extensive than the visible changes in the retina. Of seventeen cases of advanced retinal arteriosclerosis all died of apoplexy, generally within four years. Of thirty-two cases of retinal hemorrhage, with high blood-pressure and arteriosclerosis, all had apoplexy. This series emphasizes the truth of Derby's⁷ views of the seriousness of retinal hemorrhage, based on a series of thirty-one cases of which twenty-five died within a short time. In seventeen cases of embolism of the central artery of the retina, Geis⁶ found no other cause except arteriosclerosis; fourteen of these cases died of apoplexy. In contrast to these seventeen cases, he found only six cases of embolism due to heart disease. He quotes Harms' statement that embolism is very rare in the normal artery even when heart or kidney lesions exist; but that generally the vessel shows endarteritis obliterans or thrombosis. Galinowsky⁸ has made a most thorough microscopic study of a case presenting the appearance of embolism, really due to an endarteritis, and his views are supported by quotations from such recognized authorities as Priestley-Smith, Haab, and von Michel. Bull⁹ believed that cases of atrophy of the optic nerve and central scotoma, accompanying retinal arteriosclerosis, and sometimes diagnosed as simple

2. Ein Fall von Haemorrhagia retinae als Vorbote, etc., Berl. klin. Wehnschr., 1869.

3. Retinal Hemorrhage and Its Connection with Cerebral, Cardiac and Renal Lesions, Am. Jour. Med. Sci., 1874.

4. Ueber Sichtbare Erkrankungen der Netzhaut bei Allgemeine Arteriosclerosen, etc., Ztsch. f. klin. Med., 1889.

5. Medical Ophthalmoscopy, third edition, 1890, page 235.

6. Beziehungen der Gefässerkrankungen der Netzhaut zu denen des Gehirns, Klin. Monatsbl. f. Augenh., January, 1911.

7. Retinal Hemorrhage and the Duration of Life, Tr. Mass. Med. So., 1897.

8. Ueber Endarteritis der arteria centralis retinae mit Concrementbildung, Archiv. f. Augenh., 1901, voll xliii.

9. Arteriosclerosis and Its Bearing on Certain Lesions of the Retina and Optic Nerve, Ann. Ophth., January, 1904.

glaucoma, were due to sclerosis of the internal carotid, ophthalmic, and anterior cerebral vessels; and he found corroboration in Liebrecht's¹⁰ studies.

Such a résumé convinces one of the truly alarming significance of advanced arteriosclerosis in the retinal vessels, not only in respect to vision but to life as well, since these vessels are an index to the vascular integrity of the brain. To this must be added the numerous retinal diseases in which the sclerotic vessels are but one part, and perhaps a small part, of the complications of a systemic disorder; for example, the well-known albuminuric retinitis of advanced Bright's disease. In these serious constitutional disturbances, where the fundus picture is a valuable aid to diagnosis, it too often signifies a most unfavorable prognosis. The important service of the ophthalmologist is in the early stages of arteriosclerosis when the damage already done is slight.

As noted already, we usually discover these early changes in the course of routine examinations for the estimation of errors of refraction; and the frequency of our discoveries is directly proportional to the thoroughness of our routine fundus studies. This fact leads me to say that the attempt to refract middle-aged people without cycloplegia is an injustice to the physician himself and a gross injustice to the patient. Even if the thorough correction of errors of refraction were possible without cycloplegia (a supposition which is false in an overwhelming majority of cases) still the dismissal of a patient without a knowledge of his fundus, gained by study through the dilated pupil, is a careless procedure; to put it mildly. Of course, care is requisite to avoid increasing intra-ocular tension and precipitating glaucoma by the use of cycloplegics in old people, and even in middle-aged people; but the physician who cannot use such judgment is not an ophthalmologist.

Supplementing the vague complaints of many minor points and aches, digestive disorders, shortness of breath, mental hebetude, inordinate tire from the day's work, etc., by a careful study of the eyes under cycloplegia, we can accomplish several distinctly important results. We can correct the errors of refraction so that distant vision may be not only as acute as the eyes will allow in the given case, but will be easily and restfully secured. We can add to this correction for distance the convex lens which give a comfortable range of near vision, for the particular kind of close work which the patient has to do. The victim of arteriosclerosis cannot overwork delicate eye muscles hour after hour without discomfort; nor is he to be expected to accomplish with imperfect eyes what grosser muscles refuse to do after much less strain has been put on them. To make the eyes as nearly perfect optical instruments as possible by the use of proper lenses worn constantly is the first requisite. To instruct the patient in regard to his habits of eye work, the extent of reading, writing, and sewing, which can safely be done, the print and light which are suitable, etc., is to add vastly to the comfort of the patient. Of even more importance is our advice that he see his family physician, and be given the

10. Schnerv und Arteriosclerose, Archiv. f. Augenh., 1901-2, vol. xliv.

benefit of a thorough physical examination with a study of the chemistry of his secretions.

The recent character of these cases and the vagueness of their symptoms make them far from easy to treat. But their importance makes it imperative that they be not neglected. They often do not appreciate our advice nor regulate their habits accordingly. The average patient trusts more to the supposedly miraculous powers of a bitter concoction than to the pursuit of a rational hygienic plan. Yet the average physician is scarcely the one to cast the first stone! The problem of the overworked and overworried middle-aged man and woman is a large one; and the satisfaction is also large when we can put them in the way of health and efficiency and prolong their working years, through the combined advice of ophthalmologist and family physician, with the modicum of drugs which may serve as adjuvants to wholesome living.

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PREVENTION OF BLINDNESS AND CONSERVATION OF VISION *

THOMAS A. WOODRUFF, M.D.
CHICAGO

Preventable blindness is due to numerous and varied causes, among them being industrial accidents; accidents at play; Fourth-of-July celebrations; sequelæ of some of the infectious diseases; wood alcohol; sympathetic inflammation; progressive near-sightedness; eye-strain of various kinds, particularly among school children, and ophthalmia neonatorum.

The question is asked—what are the forms of preventable blindness, and what can be done to protect those who are in danger of being overcome by such a calamity? Broadly speaking, they may be divided into those occurring as the result of accident and those from disease.

Blindness as the result of accident cannot always be avoided, although if their danger were known the large majority could be averted.

Accidents occur among children playing with sharp-pointed instruments, such as knives, sharp-pointed sticks, scissors, etc., the handling of fire-arms, fire-works and fire-crackers, etc., by those who are inexperienced in their use, all causing injuries to the eyes, which, if careful preventive measures had been taken, could easily have been avoided. Accidents occurring in the various trades and industries are responsible for numerous cases of partial or complete blindness of one or both eyes. Such injuries are produced from blunt objects injuring the eye-ball, from flying particles of steel and other foreign substances either penetrating the eye-ball or becoming lodged on the cornea, the latter producing numerous scars, sometimes so numerous as to dull the cornea and dim the vision. These can be prevented by various known means, such as the adjustable shield devices placed on grinding wheels, circular saws, lathes and many forms of rapidly revolving machinery, helping to prevent

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

particles flying in the workman's face. Large protective glasses and glass protectors surrounded by wire gauze are serviceable in protecting the workman's eyes from flying particles. Wire gauze masks are useful protection against sparks and flashes from molten metal. The bursting of gauges on steam boilers frequently injure the eye by flying pieces of glass or scalding by the steam or hot water. These may be protected by wire netting or plate glass protectors. Colored glasses of amber or blue should be worn by those who work as metal polishers and buffers, and men watching furnaces where there is excessive heat and light from the fires and molten metal. Helmets and screens with four or six layers of red and green glass are often used by those working where there are strong light flashes before the eyes, as in short circuits and electric welding.

It is important that an injured eye should receive aid promptly and from one who is skilled in the handling of such cases. It is not infrequent that wounds of the cornea resulting from foreign bodies becoming imbedded, are infected as a result of their removal by the use of a dirty handkerchief, or cloths and unclean instruments in the hands of a fellow workman who is ignorant of the necessity of cleanliness and the danger of infection. Fortunately, many of the foreign bodies are frequently sterilized by heat before entering the eye, but even then infection is liable to occur from dirty hands, etc., of the one who undertakes the service, with no precautions taken to cleanse the injured part by the use of antiseptic solutions. At least 5 per cent. of the blindness in this country is due to ocular injuries and is becoming more frequent with the increase of mechanical appliances and the more general use of chemicals, gases, etc., thus not only lessening the earning ability of a considerable portion of our industrial workers, but rendering a certain proportion incapable of earning anything and becoming a charge on the family or community. The prevention of blindness from industrial accidents is of interest to the general public, not only from a humanitarian standpoint, but from an economic one as well. Partial or total reduction of vision lessens efficiency and therefore makes many victims a charge on society. The laity should be educated as to the seriousness of even slight injuries when infected, which may cause loss of eye-sight or eye-ball.

Among others who have adopted plans for the protection and compensation of their employees, may be mentioned the United States Steel Corporation and the International Harvester Company, who have provided various devices and appliances to prevent accidents and protect the eyes. Not only is it important to compel the employer to provide proper safety appliances, danger signals and rules for the protection of the employees, but there should be laws enforcing the latter to make use of such protective appliances provided. He should be educated to the danger of the neglect of these precautions.

Trachoma is a disease that was imported into this country by immigrants from Europe. It is epidemic in many localities. About 60 per cent. of all blindness in Europe is due to trachoma. When it once gets a foothold in a community it is difficult to control, being easily transmitted, and is a source of danger to all who come in close contact with it. If

treated early, good sight can almost always be preserved, but the course of treatment is necessarily long and tedious and it is not always easy to keep the patient under control; occurring as it does amongst the poorer classes, they are financially unable to devote the time necessary to receive a prolonged course of treatment and thus neglected exacerbations occur which ultimately leave the cornea scarred, and by the time the disease has worn itself out vision is seriously impaired or entirely lost.

A person afflicted with trachoma is not on a par of productive capacity with a healthy individual. That trachoma is present in certain schools in Chicago is beyond question. Nine per cent. of the pupils admitted to the Illinois School at Jacksonville are blind from trachoma. Trachoma should be made a reportable disease, as it is in Philadelphia. "The problem of the trachoma child is a serious one." Debarred from school he is in danger of losing all chance of an education during the only years in which an education is possible. According to Dr. White, trachoma expert for the Department of the Interior, about 80 per cent. of the Indians have trachoma. It is very prevalent in the mountainous districts of Kentucky, in Arkansas and in the southern portion of this state.

Ophthalmia neonatorum stands out conspicuously as the cause of about 25 per cent. of cases of preventable blindness. The evils of this disease are being rapidly controlled by the organized effort that is being put forth in various sections of the country through the combined efforts of the medical profession, sanitary authorities and the public. The medical profession have known for years the microorganism that is responsible for the great majority of all these cases and that as a prophylactic one of the silver salts correctly used would prove effective in curing all but a very small proportion of these infections, but it was not until the public were taken into our confidence and made to know and understand just what this disease is and what could be done to avoid it that results were obtained.

The cost of its prevention amounts to an infinitesimal sum. A 1 per cent. solution of nitrate of silver instilled into the eyes is a sure preventive, two cents worth of which may save the sight of a citizen, and save to the state \$10,000 for his support.

We lack in the state of Illinois laws that require:

1. That all births should be reported within forty-eight hours.
2. All cases of inflamed eyes occurring in the first two weeks after birth should be reported within twenty-four hours.
3. The regulations of midwives and midwives' schools. Of the 60,000 births reported in Chicago, 20,000 were attended by midwives.
4. Compelling the use of a prophylactic at birth by physicians as well as midwives.
5. The distribution of a chosen prophylactic with explicit directions for its use.
6. Education as to the dangers of inflamed eyes, methods of infection and precaution.

In the last report of the Massachusetts Commission for the Blind this statement is made: "The enforcement of the reporting law is the

least important part of the Boston Board of Health's preventive work. Every reported case of ophthalmia neonatorum is immediately followed up by a competent nurse, who sees to it that proper treatment is given the child, who, if necessary, is sent to a hospital. Since the institution of this follow-up system in Boston not a single known case of the disease has resulted in blindness.

The conservation of the eye-sight of children is a matter of vast importance. The foundation of subsequent eye disease is frequently laid in our schools. Defective vision and eye-strain are the causes of many physical maladies, which not only render the child dull and mentally incapable of obtaining an education, but ultimately handicap him in future life. The future of a community depends on its men and women. Therefore everything should be done to conserve the eye-sight of its boys and girls. The constitution of the child may suffer if subjected to abnormal conditions during the early period of his development and any visual defects are a menace to the future welfare of these small people. In a work so important it is the duty of the school, the home and the state to act together. If any of these fail to carry out its part in the work the boys and girls undoubtedly suffer. Parents are anxious that their children should be healthy and vigorous, but very often they are ignorant in the knowledge essential to promoting this wish. A dull sickly child is a heartbreak to its teacher as well as parent, both of whom are frequently unable, through lack of special training, to locate the child's physical limitations. The state is ready to do its utmost for its future citizens, but stands helpless because there are no ways and means of carrying out its good intentions. In the meantime the children bear the burden, and because nothing is done in their behalf, go through life needlessly and heavily handicapped. Few realize that such abnormal conditions are serious in the extreme, result in dullness, headache, stupidity and other nervous disorders that go to affect the health of our future citizens. Bodily vigor is impossible; if the child survives at all he is but a miserable second-best of what he ought to be. The pity of it is that these conditions go unremedied when a little timely skill and attention would accomplish so much for the sufferers throughout life.

About 40 per cent. of children of school age have ocular defects which render them incapable of properly performing the functions required to obtain an education. The progress that such children make in school is slow and they rapidly fall behind in their work, remaining stationary in school year after year. Much money is spent annually on the education of these delinquents, much of which could be saved to the state if these ocular defects were detected and relieved before permanent damage has been established. The detection of these defects in early childhood and their correction would have saved many a one from blindness and subsequent misery.

The systematic examination of the eyes of all school children at the beginning of each school year should be compulsory and recognized as a necessary adjunct to the school curriculum. Parents should be notified when such defects exist and advised to have them corrected at once.

Examinations of this sort can be made by the school nurses, school doctor or teachers, but preferably the latter, especially if the system as proposed by Dr. Frank Allport is followed, which is simple and inexpensive and will disclose the existence of 95 per cent. of serious eye defects. The teacher should be trained to detect defects in sight. There is no doubt in the minds of physicians that teachers can readily and efficiently be trained for this work. They are intimately acquainted with the children and are familiar with their physical conditions. The teacher it must be remembered, is not expected to do anything of a remedial character in such cases beyond discovering the child's disability and informing the parent by means of a prescribed form, of the child's abnormal condition. The school doctors and school nurses will follow up this part of the work. If the teacher be made a part of the system whose object is the preservation and conservation of vision, a great stride will be taken toward the welfare of the rising generation.

From an economic standpoint the cost of blindness is enormous. It costs the state of Illinois in the neighborhood of \$300 annually to educate a blind child, while the education of a seeing child in the public schools of Chicago costs \$34 annually. Ten years is the average period of school life. The blind child oftener stays fifteen. The actual excess paid out for the education of a blind child would not be less than \$3,000. From such an estimate we can safely say that other conditions being equal when the individual lives out the normal period, there is an economic loss of not less than \$10,000. The yearly expenditure for maintaining the blind in this country amounts approximately to \$15,000,000. Of this amount, about \$1,800 is expended on the care of those blind from ophthalmia neonatorum. The cost of blindness to the blind is evidenced in that individual being handicapped at every turn from infancy to old age, in activity, pleasure, study, opportunity, freedom. The blind person is handicapped by extra cost for special implements, appliances, special readers and guides. He must expend more energy and nervous force in every endeavor. He must select his work from the very limited number of occupations open to him and enter the contest of life under conditions of unequal competition. The average wage for those of the blind men who are employed is \$7 per week; that of the women about \$3.

Unnecessary blindness imposed in infancy is an injustice to the child. Unnecessary blindness robs the state of the most valuable asset — a productive citizen.

Dr. Woodruff presented the following resolution to the Eye, Ear, Nose and Throat Section of the Illinois State Medical Society:

WHEREAS, Organized movements are now being conducted throughout the different states for the conservation of vision and the prevention of blindness, and

WHEREAS, Such measures can be successfully carried out only in conjunction with the general public, and

WHEREAS, The benefits arising from such efforts when rightly designed and properly conducted are great, not only from a humanitarian but as well from an economic viewpoint,

Resolved, That the Section of Eye, Ear, Nose and Throat of the Illinois Medical Society endorse the work on the Conservation of Vision and the Prevention of

Blindness being carried on by the American Association for the Conservation of Vision, and approve the appointment of a committee which will be charged with the duty of organizing and conducting such a movement in the State of Illinois. This committee to include sanitarians and other physicians, ophthalmologists, architects, illuminating engineers, teachers and others who may be interested. The work to be coordinated with that of the American Association for the Conservation of Vision.

DISCUSSION

Dr. George F. Suker: I move the adoption of the resolution as suggested by Dr. Woodruff that this section of the Illinois State Medical Society introduce them, and in addition allow Dr. Woodruff to carry out the plan suggested by the National Society.

Motion seconded and carried.

The Chairman: I am sure the section would be glad to have an expression of opinion from men in the various parts of the State on this matter. It is not a Chicago idea by any means. It is a matter we all ought to be very much interested in, and in order to make it a success this society must have the cooperation not only of the medical men but the laity as well.

We all know and fully appreciate in this particular matter Dr. Woodruff has brought before us that an ounce of prevention is worth many, many pounds of cure. He has in one instance called attention to the fact that one or two ounces of silver would save a cost to the state of approximately ten thousand dollars, and there are other matters that ought to be brought more forcibly to the attention of the public. It seems to me it is up to the members of this section, the eye men particularly, to take it upon themselves to spread such knowledge through the territory in which they practice. The movement of the Legislature for the prevention of blindness is also a good one. We can do a great deal of good by proper legislation, in asking the cooperation of factories and foundries and all sorts of manufacturing establishments.

We would be very glad to hear from any of the gentlemen on the subject who care to discuss the matter.

Dr. Frederick A. Guthrie, LaSalle: I find in the city where I live that this is mostly done by midwives and I wish to know whether midwives are ever instructed in that line or not. I believe in Illinois they ought to know about these things or not practice. I think it would be a good thing if the medical men of the state would educate them along that line. I think there is another thing that would be good, and that is a liability law. It makes all the employers liable for injuries to their men and to see that they get the best attention, and also provide protection for the eyes of those who work for them. I think that law would have some effect on the prevention of blindness. Of course, how these things are going to be brought about by educating midwives, is a question that has to be determined.

The Chairman: I would also call your attention, gentlemen, to the fact that during the past year the Council of the City of Chicago has passed two ordinances, which will have a tendency to reduce the number of cases of serious eye diseases and blindness, and it is an ordinance which should be adopted, I believe, by practically every municipality of each city in the State of Illinois, and that is prohibiting the use of the so-called roller towel. The other is the ordinance requiring all medical attendants, physicians or midwives to report to the Commissioner of Health within twenty-four hours any case of sore eyes. Those two ordinances are now in force in the City of Chicago, and I believe will have a tendency to help along the propaganda of the prevention of blindness to some extent.

You have heard the resolution as submitted by Dr. Woodruff. Are you ready for the question? Those in favor of the resolution will manifest same by saying "Aye," contrary "No."

Carried.

TREATMENT OF CORNEAL ULCERS *

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DIXON, ILL.

The object of this paper is not to offer anything new in the treatment of corneal ulcers, but to present a working plan which the general practitioner may safely follow in the care of these cases coming so frequently under his observation. In considering the treatment of corneal ulcers, we will not attempt to discuss many of the agencies used in treating this condition but will consider only those that we have found by practical experience to be of value and will not necessarily mention others of decided merit.

It is of the greatest importance to determine whether we are dealing with an ulcer that is spreading or progressive or one that is healing or retrogressive. During the former stage, there is pain, lacrymation, photophobia, ciliary injection, and sluggish iris; the floor of the ulcer presents a yellowish or whitish appearance, is irregular and has areas of necrotic tissue presenting; should the destruction of the floor have been deep enough, the membrane of Descemet presents as a bead-like, transparent membrane, bulging above the surface; the edges of the ulcer are infiltrated, with radiating lines extending into the clear cornea, and at points where the ulcer is most active, we find the edges yellower and whiter and in some forms undermined.

When an ulcer is healing, the eye is less irritable, the symptoms just mentioned begin to abate, there is less pain, photophobia, lacrymation and ciliary injection, the iris reacts more readily, the floor and edges of the ulcer look cleaner, the necrotic tissue is cast off, and its place is refilled with new tissue; in the larger ulcers, blood-vessels may be seen running from the sclerocorneal margin to the floor and edges of the ulcer. To best determine the extent of an ulcer, we make use of a 2 per cent. solution of potassic fluorescein, one drop of which is dropped on the cornea and in a few moments it stains the affected area a yellowish green.

In the treatment of corneal ulcers it is first necessary to remove the cause which is frequently some foreign particle such as coal dust, chips of steel, emery dust, etc., or there may be displaced cilia scratching the cornea, the palpebral conjunctiva may be roughened; in some paralyzes the lids may fail to close properly and permit injury to the cornea by dust, wind, etc., in which instances the eyeball should be protected by some form of pad. A suppurating tear sac should receive appropriate treatment.

As a general rule bandages should not be used in treating corneal ulcers but the eye is protected by eye shades, smoked glasses or some form of eye-pad. When the cornea has perforated or threatens to perforate, a bandage is indicated; a copious discharge is a contra-indication to the use of a bandage. Small abrasions of the cornea simply

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

require the use of some mild antiseptic, as a 4 per cent. boric acid solution, and will usually heal over in a short time.

For cleansing the eye, many antiseptic washes have been used, but we believe it is not so much the antiseptic used which furnishes results as the thoroughness with which the cleansing is done. A freely discharging eye would require more frequent attention than one with a scanty discharge; the former might require irrigation every hour to keep it clean; as a general rule, cleansing every three hours will suffice. Strong antiseptics are objectionable; either hydrarg. bichlorid (1-10,000) or a 3 per cent. solution of boric acid forms a most efficient eye-wash. After cleansing the eye, we instil a solution of atropin sulphate.

Atropin sulphate is almost indispensable in the treatment of corneal ulcers; one drop of a 1 per cent. solution is dropped into the eye every three or four hours to keep the pupil dilated; it acts favorably by preventing or breaking up posterior synechia; in some cases it is used oftener at first, and at times even the pure crystal is used by the surgeon; after dropping in the atropin, we should carefully wipe off the lids to prevent an absorption of any excess of the drug which may cause poisoning in susceptible cases. In cases with glaucoma or total posterior synechia, the use of atropin is contraindicated. In cases with increased tension or threatened rupture we may alternate the use of atropin with eserine sulphate $\frac{1}{2}$ grain to 1 grain to the ounce, continuing the use of the former as the tension lowers. Some surgeons favor the use of eserine in marginal ulcers with threatened perforation as being less likely to produce anterior synechia.

Another valuable adjunct is dionin; it has decided analgesic and curative properties in corneal ulcers, it seems to hasten repair by opening up the lymph spaces in the cornea, permitting a freer flow of lymph to the parts; in the later stages it assists in clearing up the cornea; it can be used in the form of solution or ointment, 5 to 10 per cent.: some surgeons employ the drug in powdered form. The ointment will be found a convenient form of administration; it produces a chemosis of the conjunctiva at times alarming to the patient, but it is this very reaction that is beneficial; it is used at first two or three times daily, depending on the reaction produced, and later, as repair progresses, the interval of application is lengthened. In the severer forms of ulcers we apply hot applications; cloths wrung out in hot water and frequently changed, are applied to the eye for 20 minutes to one-half hour, every two or three hours.

Some ulcers, in spite of the above treatment, will continue to spread and we should lose no time in adopting more active measures. After cocainizing the eye, the floor and edges of the ulcer should be thoroughly curetted and pure carbolic acid carefully applied by means of a tooth pick dipped in the acid and all excess removed; a still more efficient means of checking the ulcer consists in using the actual cautery, which is carefully applied to the diseased parts in the form of the galvano-cautery or a probe heated to a dull red. Sometimes when applying the actual cautery to the ulcer the eye will perforate, but this hastens recovery by

diminishing the tension of the eye. The instillation of a drop of a 2 per cent. solution of potassic fluorescid will aid in determining the limits of the ulcer before applying the cautery.

Subconjunctival Injections.—In the severer forms of ulcer, subconjunctival injections are beneficial; among some of the more widely used injections is cyanid of mercury and normal salt solution. H. W. Woodruff¹ uses the following method: "The conjunctiva is anesthetized by three or four instillations of a 4 per cent. cocain solution during ten or fifteen minutes; then 8 minims of a solution of cyanid of mercury (1 to 1,000) with 4 minims of a 4 per cent. cocain solution added are injected beneath the external conjunctival cul-de-sac with the hypodermic syringe; when the needle comes in contact with the external wall of the orbit, the point should be turned slightly inward and the needle plunged deeply into the tissues so that the injection is more than subconjunctival. The tissues of the orbit surrounding the eye-ball are bathed with this solution. The swelling and edema which follow are quite severe, but this is probably beneficial rather than injurious." After the injections a bandage is applied to the eye.

When an ulcer threatens to perforate, this is best anticipated by performing Saemisch's operation, which consists in making an incision through the floor of the ulcer; the knife, entering clear cornea on one side near the edge of the ulcer, emerges at a point opposite in clear cornea on the other side of the ulcer. Should a hypopyon be present, its contents may be removed at this time by manipulating the knife or by means of a forceps passed in through the wound, or the anterior chamber may be flushed with a normal salt solution; after instilling atropin, a compress bandage is applied to the eye. If the iris prolapses it should be replaced if possible, otherwise it is grasped with a forceps, gently pulled out and snipped off close to the cornea with a scissors and the edges carefully replaced.

Serums.—In our practice serums and vaccines have been used occasionally. Stock vaccines were used, but we cannot state definitely what part they played in the recovery of our patients, and therefore hesitate to recommend their use on our experience alone. Some surgeons report favorable results from their use and we hope their more extensive use will prove their value in the treatment of these cases.

After an ulcer has healed over and the lost tissue has been replaced, we make use of some stimulating application to hasten clearing of the cornea, such as a 1 per cent. ointment of yellow oxid of mercury accompanied with massage of the eye, three times daily; powdered calomel blown on the cornea and massage will serve the same purpose, but this is more irritating; dionin in the form of a 10 per cent. ointment or a solution also serves excellently; it can be used three times daily. In all cases strict attention should be paid to the constitutional treatment of the patient, proper care taken of the bowels, careful supervision of the diet and to those who are debilitated, anemic, etc., the administration of tonics of iron and strychnin is necessary.

1. Wood's Ophthalmic Therapeutics, p. 73.

DISCUSSION

Dr. H. W. Woodruff, Joliet: I would just like to emphasize some points in the doctor's paper. One is the importance of early treatment. Of course, that is so well understood as to perhaps be superfluous to mention, but you know how prone you are, if the ulcer does not look bad to you, to say, I will wait until tomorrow and see how it looks, until later nothing can save it. I think that leads us to another point the doctor did not say very much about, but I feel quite positively about it as being very important, and that is a bacteriologic examination of the ulcer should be made to determine the kind of infection. You know you may have one kind of process that is almost certain to destroy that eye and that is a pneumococcus infection. Of course, others may be equally virulent, but pneumococcus is always a bad actor in the cornea, as anywhere else. So I would suggest in any case of ulcer of the cornea, if it shows pneumococci, it should be treated early, radically, the same as you would treat any bad ulcer; that is by the galvanocautery. In that way an ulcer of small size is absolutely cured, because you can destroy all the area of infection and it simply has to stop and get well.

Now about paracentesis. Of course, when the ulcer is progressing very rapidly in spite of your cauterization and subconjunctival injections (and by the way after a subconjunctival injection the tension of the eye may become elevated and if the tension does become elevated then everything seems to stop), the eye will not get well with the elevation of tension and something has to be done, the most reasonable thing to do is a paracentesis and you can do this in two ways. You can make a paracentesis, as the doctor says, right through the corneal ulcer. But if the ulcer is small, then do it near the limbus. So we have two points to be gained by doing a paracentesis, one is the relief of tension and one is drainage. You have the additional advantage, if the incision is through the ulcer, of the aqueous constantly washing that wound and I think that is a factor also. We are told that following a cataract extraction if we have a non-healing corneal wound we never have infection and that must be by reason of the aqueous constantly washing the corneal wound.

I have used vaccines in corneal ulcer but always in connection with the other lines of treatment, so it is impossible to say what the effect has been. Some of these ulcers in which I have used it have gotten well and others not, but I believe they should be used.

Dr. C. D. Thomas, Peoria: Ulcers of the cornea are a good deal like the poor, we always have them with us in our work, and as they make up such a considerable part of our practice all of the time, it is well worth while to hear all of the various theories and to hear them discussed.

I have at this time a condition of ulceration of the cornea that is bothering me a great deal and I believe it falls a little bit out of the ordinary. It is in a man, aged 76 years, who was sick all winter with bronchitis and asthma. He is very much run down. The ulcer had a very considerable start before I saw the case. It is located in the arcus senilis and has passed all the way around the cornea. It has grown worse persistently. I have seen it now for a week and have tried various means—means usually successful with me in my treatment. First of all I used an anesthetic, then I used carbolic acid, and it repaired for a little while, but did not give anything of a permanent nature. I wish to ask the other members about this who have had some experience. I used the electric cautery and cauterized about one-half of the circumference of the cornea. I really felt that was all I dared to do. Perhaps I was mistaken, but I have not gained much benefit from that. It seems to me it is the worst form of case. I doubt very much by trying all means if I am going to get any beneficial result. I would like the opinion of some of the other members in that regard. There is really not more than one-third of the cornea not involved. There is not much of a purulent or mucopurulent discharge from the conjunctiva. Of course, I have used yellow oxid of mercury and argyrol and washed with borie acid solution and used atropin. I had one case formerly in Chicago for over a year in the eye and ear dispensary, which was treated there for a long while for ulcer of the cornea, and the secret of the success

of the treatment which I instituted in that case was putting eserin instead of atropin in the eye. Atropin had been used and of course the usual remedies.

Dr. Richard J. Tivnen, Chicago: I would like to suggest something along the line of the prevention of corneal ulcer. This section of the Illinois State Medical Society affords us an opportunity to suggest that some sort of legislation be enacted prohibiting workmen from interfering with eyes the victims of foreign bodies. We all know that foreign bodies are the fruitful source of the production of ulcers. Workmen need protection from injuries. We have an act about the eight-hour labor day, a child-labor act, and so on. It occurs to me it would not be amiss for this section to suggest that in all factories, all industrial institutions where workmen are commonly afflicted with foreign bodies in the eye, that a regulation be operative that no fellow workman be permitted to interfere with such an injured eye; that when so injured he immediately present himself at the office of the company and either the company physician or one whom the patient may select attend to the removal of the foreign body, but that under no circumstances should a fellow workman be permitted to interfere with that eye and endeavor to remove that foreign body.

Dr. Frederick A. Guthrie, LaSalle: Regarding these ulcerations of the cornea, I have about come to the conclusion that the only thing to do is antiseptic treatment. We have got to have an infection before we have an ulcer. Of course, that is not the only cause. There may be underlying causes, as poor nutrition, etc., but if you do not have infection you do not have an ulcer. I used to treat these ulcers a good deal according to the rules laid down in the text-books: hot irrigations, cauterization, and those things, and I never got any apparently good results. For the last two or three years I have used, besides this treatment, the irrigating of the conjunctival sac very thoroughly with a boric acid and 2 per cent. nitrate of silver solution painted on inside of lids every day or every second day, and since that time have been getting very much better results with corneal ulcer. I think the reason for that is that the nitrate of silver is more strongly antiseptic than anything we use in the eye in this condition. You all know it causes the coagulation of the albumin of the mucous membrane, causes a white membrane to form in a few minutes, and it can be taken out of the eye, and in that way we get rid of a great deal of infectious material. I have used it for two or three years and have had better results with it than with anything I have ever used.

As far as cauterizing these ulcers, I have practically given up the galvano-cautery, except as mentioned by Dr. Woodruff in the case of a small ulcer, and get out the whole thing and do it right there and then. Later I used the tincture of iodine, and got very much better results than with carbolic acid. I have a great many ulcers in my practice, a good many coal miners, and there seems to be a peculiar kind of infection present which I have not determined, which makes those cases more than usually severe. I have followed out the line of treatment I have just mentioned and I get better results than before. Of course you have always the tear duct to think of in infections. If it is infected it has got to be taken care of. I had one case which illustrates this very well. The ulcer got practically well and for some reason I did not notice the tear duct and one morning the ulcer was reinfected and as bad as ever and I found that was where the infection was coming from. That only shows that every source of infection has got to be removed as soon as possible in these cases.

Dr. Willis O. Nance, Chicago: I did not understand from the doctor's paper how the nitrate of silver was applied. Is the lid everted and application made to the palpebral conjunctiva? I have never employed that method in corneal ulcer. I am inclined to think it well recommended. I am quite satisfied that the use of antiseptics as irrigations in the eye in cases of corneal ulcer have very little effect. I believe that the boric acid or bichlorid, or whatever solution may be used, simply washes out and gets rid of the secretion between the lids, and does very little good in curing the trouble. More active and stringent methods are necessary.

I want to emphasize with Dr. Woodruff the importance of making a bacteriologic examination in cases of ulcer. I am a believer in practical bacteriology, and if there is a practical instance in eye disease where it is necessary to make a bac-

teriologic examination, it is in cases of corneal ulcer. First, for the one reason Dr. Woodruff particularly called attention to, namely, to determine if you have a pneumococcus infection to deal with; if you have you must get busy at once and keep busy; if you do not you will lose the eye. Second, if there is any other virulent microorganism present, you ought to know what it is, because if it is present and treatment is not properly administered it is likely to have a very deleterious effect on the cornea and upon the eye. If the diplobacillus is present it ought to be known because if recognized it yields to proper treatment quickly. Zinc is a specific in cases of ulcer caused by this microorganism.

As to the use of the bandage I invariably employ it in the treatment of corneal ulcers. That is, I mean that in practically every case I do. I naturally would not use it in cases of gonorrheal infection of the eye or in other instances where there is a great deal of discharge. It is most natural that any friction of the cornea should be relieved, therefore I believe that the application of a bandage is one of the very essential things in the treatment of ulcer.

I also favor the employment of heat. I believe that the more or less continuous application of heat is of decided service. That does not mean the interrupted application of heat, an application for five minutes or ten minutes, but an application for at least a duration of thirty or forty minutes or longer or even continually. Interrupted use of heat, or the use of warm applications, I do not believe of very much value. By putting on very hot applications active stimulation is obtained thereby encouraging preservation of the integrity of the remaining healthy tissue.

As to eserine, I never use it in cases of corneal ulcer. I never have seen any indication for its use, and I am sure there are contraindications to its use. Severe corneal ulcer without involvement of the iris and ciliary body by contiguity is rare and with eserine it is possible to do a great deal of harm. Eserine may reduce tension of the eyeball and help the condition temporarily, but if the tension demands lowering, a paracentesis is indicated. There is no objection to doing this little operation; in fact, it has been in my experience a very satisfactory adjunct to the medicinal treatment of corneal ulcer.

Dr. George F. Suker, Chicago: The treatment of corneal ulcer is a very large field. I fully agree with the remarks of Dr. Guthrie, in reference to the use of nitrate of silver, but have used it in a very different manner. The more acute the inflammatory condition of the ulcer is, the stronger is the solution of silver I use. The silver solution is applied directly to the corneal ulcer and the excess is not flushed out as the applicator is just sufficiently saturated with silver to have it just thoroughly moistened. The silver may be used in solution of 30 to 40 to 60 grains to the ounce and applied either daily or every other day as the indications warrant. In the sluggish type of ulcer one can safely use the stronger silver solutions daily.

One need not fear the staining of the cornea in cautiously using these strong solutions of nitrate of silver. It is only the weaker solutions continuously used, from day to day, that have ever stained any cornea.

In the milder cases, when the inflammatory conditions are not so severe I am prone to use the argyrol crystals. The crystal, having been moistened with boric acid so as to dissolve every minute sharp point, is massaged into the corneal ulcer by means of a glass rod. This argyrol crystal massage can be applied once or twice daily as the case demands or conditions warrant.

In addition to the above one will frequently find that the long continued use of great heat is very beneficial, while in some cases the judicious use of ice cold applications for short periods, is beneficial.

A word or two in reference to the cautery, either electro or thermocautery. Both of these, unless used with the greatest caution and dexterity are apt to sacrifice too much healthy corneal tissue, abutting the ulcer, thus increasing the size of the opacity. A thorough curetting will accomplish as much as the cautery; for, after a thorough curetting it is advisable to apply either the argyrol crystal or the strong silver nitrate solution as above suggested.

Dr. Lesage (closing the discussion): I wish to thank the doctors for their very kind discussion of this paper. I have found that the continuous application of moist heat makes the skin sore, so I have been in the habit of using a hot water bag, and when the patient complains of the weight I often use bran bags, four or five inches square, and have three or four of them on hand; while one is in use the others are hot, and in this way you have a continuous supply of heat.

HEMORRHAGE AS A CAUSE OF BLINDNESS, WITH A REPORT OF A CASE *

CARROLL B. WELTON, M.D.

PEORIA, ILL.

Severe hemorrhages, especially if occurring in rapid succession, lead to extreme anemia and its consequences. One of the latter is its effect on the optic nerve, producing an atrophy with its accompanying blindness, either partial or complete. In loss of sight, after hemorrhage, both eyes in a great majority of cases are involved, although the trouble may appear in the one, several days before its fellow is affected. (Chevallereau,¹ Gellemaerts.²) Females are affected oftener than males and the greater number of cases occur between the ages of 40 and 50. These hemorrhages may have their origin in the stomach, intestinal tract, lungs, nose, uterus, veins as after venesection, and other surgical procedures, occasionally after injuries and it has followed after puncture of large ascitic masses of fluid (Deyl³). The blindness is more complete after hemorrhage from the stomach.

Hemorrhage which causes either partial or complete blindness is almost always of spontaneous origin. Defects of vision may occur after hemorrhage, which are only temporary, but are explained in that the circulation is soon reestablished. A case which I wish to present is as follows:

Man, aged 58 years, a farm hand who, eleven years before, while at his work became suddenly faint, suffered severe muscular weakness and vomited a considerable quantity of blood. He had to stop his work and go to his home where he again had an attack of hematemesis. One week later, he had another similar hemorrhage. In November, 1910, during a period of one week he had three more hemorrhages, vomiting the blood in each instance. The blood from these hemorrhages sometimes was black, and sometimes bright red in color, and these periods of vomiting would last, so the man states, from 5 to 15 minutes. The patient says that at no time did blood pass from the bowel. During the last one he became unconscious and remained in that condition for four days. When he again recovered consciousness, he found he was completely blind, even perception of light being impossible. He remained in this state for two weeks. Up to the time of the last hemorrhage, his vision had always been good.

On the fifteenth day, there was a change for the better, he being able to distinguish light and for a time, the vision gradually improved. In May, 1911, when I first saw him, the vision was R. 10/80, L. finger counting at three feet.

* Read at the Sixty-Second Annual Meeting of the Illinois Medical Society, at Springfield, May 21-23, 1912.

1. Chevallereau: "Sur un cas d'atrophie papillaire brusque consecutive á des hémorragies utérines," Arch. d'opht., Par. 1903, xxlii, 417.

2. Gellemaerts: "Atrophie optique suite de métrorrhagie," Policlin. Brux., 1904, i, 375.

3. Deyl: System of Diseases of Eye (Norris and Oliver), 1900.

Previous History: He has always been a strong healthy man and he has never had any serious illness. His occupation has necessitated heavy labor. He indulges in alcoholic beverages and admits to having been intoxicated a number of times. He denies ever having had syphilis and he has no tubercular manifestations. He is married, and has nine living children, and there are four dead. Family history is negative, except that his father died of some stomach trouble at 55. He has never had any disease of the eye. The patient shows a marked anemia and has difficulty in getting about, feeling his way rather than seeing when he wishes to sit down or move around. He suffers now at times from attacks of vertigo accompanied with muscular weakness.

Examination of the eyes shows a marked contraction of the pupils, which have only a feeble reaction to light stimulus. Application of a solution of sulphate of atropin, produces only slight dilatation. Consensual reaction is absent. Both pupils react to convergence. The pupils are misshapen, being oval in the oblique meridians. There is a symmetrical atrophy of the iris stroma, around the pupillary border, crescentic in shape, and extending below nearly to the periphery, leaving a dark pigmented area. Tension is lowered. Ophthalmoscopic examination shows an atrophic whiteness of the nerve head in each eye. Media is hazy and no details of the fundus can be seen.

The patient was referred to an internist, Dr. George Parker, for examination and he reports "There is a myocarditis, with a generalized arteriosclerosis. There is no palpable tumor in the abdomen. Examination of urine is negative."

The involvement of the eyes after hemorrhage is not uncommon. Pergens,⁴ in 1896, reported a series of sixty-four cases. However, Haab⁵ failed to find a single instance of the disease among 60,000 clinic and private patients. In most cases, the advent of the visual disturbance does not follow immediately after the loss of blood, but manifests itself after a period of three or four days. It occurs also generally after successive bleedings, although it may appear after a single escape of blood (Kurtsinger,⁶ Patterson,⁷ De Schweinitz,⁸ Weeks⁹). Where the interval between the hemorrhage and the onset of visual disturbance is a week or more, the probable degree of damage to sight is much greater. In my case no visual defect followed the first series of hemorrhages, but sudden blindness ensued after several more losses, ten years afterward.

In regard to the amount of blood lost, that is necessary to produce changes in the eye, nothing is positively known, as a physician is rarely present at the time and the statements of patients are inaccurate.

Partial loss of sight in one eye, following a few days after a hemorrhage from the bowel, is reported by Ellet,¹⁰ in which case the patient lost only a teaspoonful of blood, and which that writer believes to be the primary cause. The connection of the small hemorrhage from the bowel in its relationship to the production of the visual disorder seems to be rather remote.

4. Pergens: *Ann. d'oc.*, cxv, 1896.

5. Haab: Quoted by Sweet: "Optic Atrophy Following Intestinal Hemorrhage," *Trans. Am. Ophth. Soc., Hartford*, 1903, x, 183, 1 pl.

6. Kurtsinger: *Beiträge zur augenheilkunde*, Heft 53, 1902.

7. Patterson: "Blindness From Gastric Hemorrhage," *Ophth. Record*, 1909, 264.

8. De Schweinitz: *Ibid.*, 1910, xix, 185.

9. Weeks: *Text. Diseases of Eye*, 1910.

10. Ellet: "A Case of Retinitis Proliferans with Pigmentation, following Hemorrhage from the Bowel," *Ophth. Record*, Jan., 1910.

A case is also reported by Moore,¹¹ in which sight disturbance followed in a patient who had been the subject for ten years of "bleeding piles." This case likewise is inconclusive.

A large quantity of blood must be lost to produce an anemia sufficient to interfere with the nutrition of the retina and optic nerve. We know that the organism can withstand a loss of 3 per cent. of the body weight without causing death (Howell¹²). When "bleeding" as a therapeutic measure was common, patients frequently suffered a loss of 30 ounces without any grave symptoms arising (Adami¹³).

It is well to note the singular fact that permanent visual defect scarcely ever follows postoperative hemorrhage. After some operative procedures at times large quantities of blood are lost, and the involvement of the eyes in so few of these cases, seems to be without explanation. In three cases of my own, in which, after removal of the tonsils especially severe hemorrhages occurred several hours after the patients had been removed from the operating-room, in none of these did any permanent visual defect take place.

An explanation, perhaps, of the non-involvement of the eyes in cases and in cases of this character is in the early use of physiologic salt solution.

If the eyes are examined early with the ophthalmoscope, after severe hemorrhage, in some cases nothing pathologic is found. In others, paleness or edema of the disk and retina, with retinal hemorrhages, and even acute neuroretinitis is present. In a series of twenty-eight cases collected by Chevallereau,¹ retinal hemorrhages were present in three. Considerable change may be present in the fundus, without any disturbance of vision. The visual fields are reduced in some cases but very little, while in others to purely tubular—10"—15".

Complete loss of vision occurs in about 50 per cent. of cases (Singer,¹⁴ Fries¹⁵). About 30 per cent. recover partially and 15 per cent. regain their vision completely. Complete restoration of sight, however, has never been recorded after hemorrhage from the stomach (Gowers). Nystagmus has been observed to develop in these blind eyes in some cases (Chevallereau¹).

The pathology of the production of amblyopia after hemorrhage is not clear. Of course, insufficient blood-supply of the cerebral cortex and retina is the primary factor in the production of this form of blindness. This is shown in that if a sufficient circulation is not soon established (lowering of the head, use of physiologic salt solution, etc.) the prognosis becomes much worse. When the blindness follows immediately after the hemorrhage the cause is thought to be an ischemia of the nerve, and when the visual disorder appears later, it is supposed to be due to hemorrhages

11. Moore: Two Cases of Severe Loss of Sight Following Loss of Blood, *Trans. Ophth. Soc. of United Kingdom*, xxxi, Fasc. I, 1911, 39.

12. Howell: *Text-Book, Physiology*, 1910, 453.

13. Adami: *Principles of Pathology*, 1911.

14. Singer: *Text-Book, Diseases of Eye* (Weeks).

15. Fries: *Klinische monatsbl. für Augenheilkunde*, Aug., 1876.

into the nerves, nerve centers or intervaginal space from malnutrition of the vessel walls. The time of onset of amblyopia in regard to its early or late appearance (Fries¹⁵) is certainly of importance and two separate and distinct etiologic factors are shown.

On anatomical examination, Hirschberg¹⁶ and Chevallereau found optic atrophy. Chevallereau also found vessels of different caliber in the atrophic portion of the optic nerve with thickened walls, but no obliteration of their canals. The hypothesis that contraction of the minor blood-vessels occurs under the influence of a hemorrhage, he believes has therefore been confirmed by anatomical proof.

The action of bleeding is not by diminishing the blood in circulation, but by contraction of the smaller vessels, as shown by the paleness of the face and extremities and sometimes by syncope.

Raehlmann¹⁷ found changes in the blood-vessels. Schmidt-Rimpler¹⁸ edema of visual centers. Zeigler,¹⁹ Scagliosi²⁰ and Holden²¹ found degeneration of the ganglion cells and nerve fiber layer (Chevallereau). Holden supports this theory of the mode of blindness, after loss of blood, by positive experiments on dogs and rabbits. In his work, with which you are all familiar, he subjected a series of dogs to loss of blood. "One or two days after a single profuse hemorrhage, signs of edema of the nerve fiber and ganglion cell layers of the retina were present and some of the ganglion cells showed evidence of beginning degeneration. The vision fails in the entire field. At first ophthalmoscopic changes are wanting or if present consist in slight edema of the retina with or without hemorrhages and in narrowing of the retinal arteries and pallor of the disk." Weeks⁹ concludes from the findings of these observers that "it is fully recognized" as being a trophic disturbance (Sweet⁵), resulting in degeneration of the ganglion cells of the retina and secondary atrophy of the optic nerve (Parsons²²).

However, these findings cannot be accepted as final, nor as offering a *modus operandi* in all cases. Bouveret.²³ for example, has demonstrated an edema of the brain as the only change found in a case in which aphasia and hemiplegia had developed after a copious hemorrhage from the stomach.

Treatment is of no avail if the case is not seen early. The proper position of the patient, physiologic salt solution, either intravenous or subcutaneous and the use of supportive measures are of value immediately after the hemorrhage. Terson.²⁴ by this means, claims to have been able to save the sight in such a case. Chevallereau advocates the use of nitrite of amyl to combat contraction of the minor blood-vessels and theoretically it would seem to be of value. Iron, arsenous acid, strychnin

16. Hirschberg: Bericht der Ophthalmologischen Gesellschaft zu Heidelberg, 1877.

17. Raehlmann: Fortschr. d. med., vii, 1889.

18. Schmidt-Rimpler: Klin. Monatsbl. für Augenheilk., xxv, 1887.

19. Zeigler: Beiträge zur Path. Anat. u. Phys., II, 1, 57.

20. Scagliosi: Nerven Krankheiten, 1905, 724.

21. Holden: Arch. für Augenheilkunde, xl, 1889.

22. Parsons: Pathology of the Eye, 1908.

23. Bouveret: Nerven Krankheiten, 1905, 724.

24. Terson: Clinical Symptomatology, 1911, 529.

and potassium iodid are perhaps useful, especially in the cases when only partial loss of vision occurs.

Surgeons should always bear in mind the possibility of blindness following hemorrhages after abdominal operations, particularly in cases of strangulated hernia, after which loss of blood of gastric origin may occur. They should also keep in mind the need of early measures of relief, if the latter are to be of any benefit.

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DISCUSSION

Dr. Casey Wood, Chicago: I have always been greatly interested in the subject of blindness following hemorrhage. I remember one case where I can definitely say that blindness followed an excessive loss of blood. This accident occurred in a woman, 45 years of age, who had carcinoma of the stomach. By the way, let me say that my investigation of this matter shows that the most marked cases, the cases one feels surest of, follow hemorrhage from either an ulcer or a malignant disease of this organ. In this case both eyes were affected, and the optic atrophy was almost total.

I would like to ask Dr. Welton the character of the fields in the case he reports.

Just why we should have blindness following hemorrhage in apparently healthy individuals has always been a mystery to me. I happened to be in New York attending a meeting of the Academy of Medicine when Weeks presented the paper referred to by the essayist. Weeks believed the consensus of opinion indicated that the more one inquires into the cause of blindness following hemorrhage the deeper the mystery grows. My own idea is in cases where optic atrophy follows hemorrhage one deals with a pure idiosyncrasy. When thousands of people suffer seriously from stomach ulcer, and extreme loss of blood from other causes, why should secondary affections of the optic nerve be so very uncommon?

One must, I am sure, predicate some definite contributing cause, as indicated, for instance, in Dr. Welton's case of marked arteriosclerosis, and the question is whether it really had anything to do with the blindness.

With reference to experiments on dogs I have to protest against the doctor's conclusion. The dog's eye is entirely different from the human eye; the histology is different, the arrangement of the blood-vessels and lymph spaces are entirely different. Between ourselves, I think nine-tenths of the experiments on animals are absolutely worthless so far as concerns the eye.

Dr. W. L. Ballenger, Chicago: The doctor referred to nystagmus as a symptom. We have recognized at least three types of nystagmus, and I would like to know which type was present. There is ocular nystagmus; then there is vestibular nystagmus which is due to otitic disease always. Then we have cerebellar nystagmus. It is interesting to know which type of nystagmus was present in this case. It was probably an ocular nystagmus.

Dr. Welton (closing the discussion): I have not very much to add. I would like to state that we tried to get this man into the hospital, but he absolutely refused to go. He was sent to a general diagnostician to ascertain just what the general condition was and I suspected some gastric trouble, probably, a cancer, but repeated efforts to get him into the hospital for examination failed, so I cannot tell you what the general condition was. The fields of this man could not be taken. The man's mind was dull, and that has happened in some cases that have been reported. Patterson reports a case in which the mind was markedly affected. In this man we could get nothing when we attempted to get his field.

As to the kind of nystagmus that was present, I do not know. I expect it was an ocular nystagmus.

THE TREATMENT OF SECONDARY DIVERGENT STRABISMUS *

H. W. WOODRUFF, M.D.

JOLIET, ILL.

Within the past year I have had the satisfaction of adding something to my own experience in correcting cases of divergent strabismus which followed on tenotomies for the cure of the convergent variety.

I would hesitate to present this subject were it not for the fact that I formerly looked on these conditions as difficult to correct and rather more unsatisfactory than the primary variety to both patient and surgeon. In the light of this recent experience I now consider them of all kinds of strabismus the most satisfactory.

Text-book instruction is quite thorough as to prophylaxis and indeed ophthalmic literature for several years has been replete with suggestions as to the method or methods by which convergent strabismus can be corrected without danger of over-effect.

Tenotomy of an internal rectus muscle is, considering its simplicity, one of the most uncertain in its remote effects. This fact is so well recognized that many, following the teaching of Landolt, have almost abandoned tenotomy in favor of advancement or shortening operations. As these teachings are more and more followed secondary divergence will occur less frequently.

Others who still prefer tenotomy confine the procedure to the tendon itself and are satisfied with an under-correction, preferring this rather than a remote divergence, which is certain to follow a case completely corrected by tenotomy. Then, too, the operation is not performed in the very young and in no instance without a preceding correction of the existing refractive error. As a beginner in ophthalmology, I remember administering a general anesthetic to a baby but a few months old, while the attending oculist performed very complete tenotomies of both internal recti muscles. I have often wondered since if I could have been held as a participant in that crime or not. I am glad to say, however, that it is chiefly to the charlatan that I am indebted for the material which affords the basis of this paper.

It is the man who cures strabismus in one minute without the use of the knife who is the chief offender. One in particular, who fifteen to twenty years ago, left a trail from Cairo to Chicago marked by seared conjunctivæ, sunken earunculae, protruding and diverging "windows of the soul," as they are pleased to call them. If any of you present have crossed this modern John Taylor's path or a similar one you must have encountered a number of these cases. Almost daily I see on the street a young woman who was operated on by this quack for convergent strabismus. She has since been operated on twice, according to his own statement, by an oculist in the northern part of this state, but with no appreciable result. At the November, 1911, meeting of the Chicago

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

Ophthalmological Society, I presented a case of this kind on which I had operated the previous August. The method of operating and the result obtained brought out such favorable comment that, on the invitation of your chairman, I present the subject again with a report of two additional cases. I shall, however, disclaim anything new in this operation, and it is only to call attention to its simplicity and certain success which follows that I trespass on your time.

The method followed in the "reattachment operation" is as follows: After obtaining anesthesia by instillation of 4 per cent. cocain solution, a subconjunctival injection of 1 per cent. cocain with 5 drops of adrenalin solution 1 to 1,000, should be injected beneath the conjunctiva in the operation field. After massaging the resultant swelling for a few minutes, a vertical incision is made in the conjunctiva only over the site of the old muscle insertion at least 20 mm. in length. The conjunctiva is dissected from the capsule of Tenon well underneath the caruncle. The capsule is then picked up with the forceps and dissected from the sclera until all capsular and muscular adhesions are loosened from the sclera. Two horizontal incisions are made in the capsule corresponding to the normal position of the muscle borders, but somewhat wider than the tendon itself. This cut may extend as far as the caruncle itself. This gives a tongue-shape flap, which somewhere near the caruncle must contain the retracted internal rectus muscle.

The conjunctival flap, entirely separated from the capsule, is held out of the way by an assistant. The tongue-shaped flap containing tendon and capsule is held up by broad forceps while sutures are inserted (No. 00 formalized pyoktanin catgut) from beneath outward, but not through the conjunctiva. If the special needle here shown is used, the sutures can be placed far back beneath the caruncle. Two of these sutures are placed, one in the upper portion of the flap and one below, and tied according to the Worth method. These sutures are inserted in the sclera not at the limbus, but over the site of the original insertion of the tendon. Just before they are tied a third one in the form of a mattress suture should be passed between the other two and tied in the same manner. When these three sutures are drawn tightly and tied in three knots the eye-ball is brought back into the proper position. The conjunctival flap is replaced with silk sutures. If the caruncle is still sunken it may be drawn forward by the central conjunctival suture sufficient to relieve that deformity. During the operation a portion of the tongue of capsule may be removed if it is so excessive as to cause much bunching, which, however, will later disappear. It is best to apply a binocular bandage for forty-eight hours. The external rectus is tenotomized or not, according to the immediate effect of the advancement.

REPORT OF CASES

CASE 1.—J. A. M., aged 31 years. R. V. 6/6+75+25 cylinder ax. 90=6/6.

L. V. =6/6+50 cylinder ax. 90=6/5.

Has 25° of divergence, alternating but uses the left eye mostly. Sunken caruncle, slight exophthalmus, adductive power limited in the right eye. Patient said his eyes turned in since his earliest remembrance. When a child had an

operation in Chicago, probably a tenotomy of right internal rectus, which did not cure his condition. When he was 16 years of age another tenotomy was performed on the same muscle by a quack. This was followed by a divergence which was operated on by the method above described on June 1, 1911. For the central suture I used silk and included the conjunctiva for the purpose of drawing forward the sunken caruncle. The result almost one year after the operation is perfect from a cosmetic standpoint.

CASE 2.—Dr. K. Convergent strabismus of the right eye during childhood up to 18 years of age, when he was operated on by an advertising quack by a tenotomy of the internal rectus of the right eye. This resulted in a divergence of 45° , exophthalmus, sunken caruncle and no power of adduction beyond the medium plane. A reattachment of the muscle and capsule made in August, 1911, with a tenotomy of the external rectus gave a satisfactory result. The power of adduction was not completely restored. This case was the one shown at the November meeting of the Ophthalmological Society.

CASE 3.—John R., aged 30 years, April 24, 1912, came to the Eye and Ear Infirmary with a pneumococcus conjunctivitis of the left eye. Divergent strabismus R. E. 35° .

R. V. $=2/200+250+75$ ax. $60=20/200$.

L. V. $=20/15+250+50$ ax. $90=20/15$.

There was a history of an operation for cross-eyes when two years of age. Examination showed divergent strabismus of the R. E., and scars over the original insertion of both internal recti muscles. Adduction was impaired in both eyes. Replacement of both internal recti was performed; one May 3, the other May 10. The external recti were not tenotomized. No tenotomy was performed on the external recti muscles and a slight under-correction was the result.

I am well aware that there is nothing startling in the report of these cases or in the operation, but the following factors may be worthy of special consideration:

1. These cases are all adults, so that local anesthesia is sufficient, especially if a subconjunctival injection is made of cocain and adrenalin.

2. The conjunctiva is not advanced unless necessary on account of sunken caruncle.

3. No attempt is made to dissect out the tendon or muscle. The tendon and muscles must lie in the capsule.

4. The suture must be placed far enough back beneath the caruncle and then sufficient tissue will be obtained to give the desired effect.

5. Place the attachment of the flap over the site of old insertion.

6. If the effect is not sufficient a tenotomy of the external rectus is indicated.

7. The length of time following the original tenotomy does not make any difference in the result. The muscle does not atrophy. If it does it is only a simple atrophy and soon regains its function at least to a degree. In the first case fifteen years had elapsed after the second and damaging tenotomy; in the second case, nineteen years, and in the third case, twenty-eight years. I believe action can be restored to the muscles after any period of time.

One week ago last Monday a man, aged 29, presented himself at the clinic with a history of having had his eyes operated on four days before for cross-eyes dating back to childhood. As the operation was so recent the internal recti were readily drawn forward sufficiently to leave a slight

convergence. Patient had a high degree of hypermetropia. This makes four cases that I have seen in one year and have operated on. None of them had been in the hands of reputable oculists.

DISCUSSION

Dr. Richard J. Tivnen, Chicago: As usual, our friend Dr. Woodruff has presented to us something that is interesting and very practical. This has gotten to be a habit with the doctor.

The closing statement of his paper, namely, that of the four cases which he had operated on none had been in the hands of reputable physicians, is certainly very gratifying. This John Taylor he refers to was a faker who lived at Joliet, and some of you I am sure have run across his trail. I only wish to make reference to this doctor and say that he removed from Joliet shortly after Dr. Woodruff arrived. You can readily guess the reason.

The work that Dr. Woodruff has done in this particularly discouraging field is one that should excite our interest, because it is in a class of cases that we are all very likely to shirk operation. Most of these cases are very difficult. We have been possessed with the idea that the muscle had atrophied. Dr. Woodruff tells us that this is not true, and he believes the muscle may be at any time restored to adduction. One case he cited I notice was some twenty years old. I had two cases, both as it happened, from Joliet, both operated on by this modern John Taylor, and both operated on when they were little children. One came for operation to me some twelve years after the original operation, and the other some fourteen years. I used practically the same method Dr. Woodruff described. I used a long sharp pointed hook, I cannot think of the name just at present, with which I could easily grasp the muscle and I was able to bring it forward. I was able to get a good result in one of these cases, but only a fair one in the other. It seems to me it would be well to do a tenotomy in nearly all of these cases. The tension on the advancement suture is such that we would likely bring about more certain results if that tension was relieved, by combining at least a partial tenotomy.

I enjoyed the paper very much. I have seen one of the doctor's cases, and were it not for the fact that I know him so well and had also seen the case I would not think he had operated at all as the result is so beautiful.

A Doctor: I would like to ask Dr. Woodruff if in any of these cases the patients complained of diplopia. I had in mind a case with a double tenotomy about eight years ago which I saw two months ago. Her chief complaint was diplopia. She is a domestic, and you can imagine about what happens in the kitchen—it was a continual breaking of dishes. She came to me with the idea of having a secondary operation. She wanted to know if I could guarantee the diplopia would disappear. Of course, I would not insure her whether it would relieve her of the diplopia or not.

Dr. George F. Suker, Chicago: I think the section ought to well heed the remarks made by Dr. Woodruff. I complimented him some time ago and encouraged him in doing that work. He seemed to hesitate in bringing it before us to-day because he had brought it before the Chicago Ophthalmological Society some time ago. He has developed in that operation some certain anatomical technical points which we have forgotten in our anatomy. He tells us in dissecting the muscle to attempt to get the muscle fibers, to make a parallel incision through the capsule and through the tissues in which the muscle lies, because after a tenotomy you have a certain amount of adhesion between the capsule and the muscle itself.

The doctor has been very technical about the matter; whether he realizes it or not he has certainly not gone wrong as far as the physical principles of the operation are concerned. It gives you excellent results every single time if you carry out the principles and technic he has laid down for us.

Dr. Sterling, Pontiac: I wish to say that all of the tenotomies are not limited to quacks. I saw one of our eminent surgeons do a similar operation last fall.

There were some visitors here on the way back from Los Angeles and they stopped to see one of the best operators in this country and he did this operation. Some of these patients come from the hands of the so-called most reputable men we have. I have now five cases, all from the hands of as well known ophthalmologists as we have. Three of these cases were operated on by this man in the same day, without any examination as to the refraction and without anything more than a simple glance at the eye, and he told them they needed an operation. In none was there diplopia or a history of a headache or that they might need glasses; three were operated on one day and two of them were operated on the second day. Three cases are in the hands of a neurologist today; the other two cases are in the hands of the same man and are more or less subjects for the neurologist.

Dr. Woodruff (closing the discussion): I wish to thank the gentlemen for the discussion of my paper. The question of diplopia only entered into one of these cases. Of course, you are certain to have diplopia if your patient has a 6/6 vision, or approximately the same vision in each eye. If your patient has good vision in each eye you can be sure you are going to have diplopia. This was so in the first case I reported here; this young man had diplopia, but he has gotten to a point, after one year, where he says it does not annoy him and he is so much better satisfied and his personal appearance has improved and that he does not find any particular fault with that diplopia.

The reference the doctor makes as to others besides irregulars doing the operation, I must confess that I have done it myself, but not, of course, of late years; that was at the time I commenced to practice ophthalmology, up to the time something was said about the dangers of tenotomies—and it took a little while before we learned about the dangers—but this does not happen now, because if you do a tenotomy and an over-effect is obtained, you will at once rectify that condition.

THE TRAUMATIC DISLOCATION OF THE CRYSTALLINE LENS WITHOUT RUPTURE OF THE EYE-BALL; WITH REPORT OF A CASE *

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Injuries to the eye present such an infinite number of possibilities and conditions, so many variations in course, extent, symptoms and complications, that while we may acquire some valuable information from experience and may formulate certain rules and methods of treatment applicable to many conditions, still each eye injury is usually a law unto itself.

The injuries to the eye for all practical purposes may be classified under two classes or divisions:

First, those penetrating the eye-ball.

Second, those that do not penetrate the eye-ball.

These ocular traumatismis are more numerous than in former years due to the greater number of mechanical inventions, etc. The clinical pictures resulting from traumatic injury to the eye are practically without number.

The difference in structure and the even greater difference in the inflicting agents make the compilation of a complete list of eye injuries impossible. One authority has been able to name seventy different pathologic conditions of the eye and orbit caused by bullet wounds alone.

* Read at the Sixty-Second Annual Meeting of the Illinois Medical Society, at Springfield, May 21-23, 1912.

Therefore, owing to the great multiplicity of the conditions resulting from traumatic injuries to the eye, I will attempt in this paper to present but one of the serious conditions resulting from trauma; namely, the dislocation of the crystalline lens without rupture or penetration of the eye-ball.

This character of injury is usually caused by concussion, that is, by a substance striking the cornea or sclera and bounding off without penetrating; the cornea usually being the point of resistance. The cornea is of such a tenacious and elastic character it can withstand a sufficient blow or force without penetration of its tissue to dislocate the lens completely and even cause the fragmentation of the lens matter, which was true in the case I will report. In cases where there is fragmentation of the lens they are usually the result of injuries from shot striking the cornea without sufficient force to enter. Blows which strike the eye-ball when the lids are closed may also produce the dislocation of the lens.

I have had during the past year one case under my care which I consider of sufficient interest to report the history and treatment of.

D. B., aged 11 years, was accidentally shot in the left eye Feb. 25, 1911, while handling an air-gun, the muzzle being almost in contact with the eye. I saw him a short time after the injury. There was no penetrating wound of the cornea or sclera, only a slight abrasion of the cornea where the shot first struck and glanced off. The examination of the interior of the eye was impossible, as the anterior chamber was filled with blood. Vision was reduced to perception of light. After a few days, when the blood had been absorbed, the lens could be seen completely dislocated. The horizontal axis of the lens pointed directly anteriorly and posteriorly. About half of the lens was above the iris and half below. The lens had a striated appearance which later proved to be due to its fragmentation. There was also a large coloboma of the iris to the nasal side.

Treatment: Atropin and the application of cold compresses. After the inflammation had subsided it became a question about the removal of the lens matter, but after consultation it was decided to watch and see if nature would remove the lens matter by absorption, and I am glad to be able to make the statement that at the expiration of eight months after the injury the lens matter had been absorbed. The only trace of the lens that can be now made out is very tiny shreds in the anterior chamber, which are evidently the unabsorbed parts of the capsule. The coloboma of the iris still exists. The vision without the aid of a lens at the present time is the counting of fingers at ten feet; with a plus ten lens it is six-twentieths.

The case which I have reported is a very rare one, owing to the fact that the fragmentation of the lens matter and the complete rupture of the capsule were equivalent to a needling operation, with the exception that there was no puncturing wound. And as the patient was young, the percentage of insoluble lens matter was at its minimum.

Diagnosis.—The examination of these cases immediately after injury is indeed very difficult, owing to the hemorrhages into the anterior chamber, which come from the injury to the blood-vessels of the ciliary body and iris, which seldom escapes injury. It may be several days before we are able to make a definite diagnosis of the condition, unless the lens is completely dislocated into the anterior chamber. When the blood has been absorbed we may find any one of the following conditions:

First, a partial dislocation or tilting of lens.

Second, a complete dislocation of lens posteriorly into the vitreous.

Third, anteriorly into the anterior chamber and in very rare cases attended by rupture of the sclera, it may lie beneath the conjunctiva.

Laceration of the iris is a common complication in these injuries, especially if the lens is found in the anterior chamber.

Prognosis.—The prognosis of these cases is necessarily grave. There can be no hope held out for the complete restoration of vision. Of course, these injuries to the lens without rupture or penetration of the globe are not so serious, as there is practically no danger of infection from without, while sympathetic inflammation is fortunately rare. In 280,452 cases of eye affections recorded at the New York Eye and Ear Infirmary, sympathetic inflammation occurred five times. At the Ophthalmic and Aural Institute, in 86,127 cases, sympathetic inflammation occurred four times. Mooren reports 146 cases in 108,416 patients seen in private and hospital practice. But we realize that while it does occur very rarely, yet when it does occur it is one of the most serious conditions that the ophthalmologist encounters, as one of the chief causes of sympathetic inflammation is an injury to the ciliary zone resulting in cyclitis or iridocyclitis, which is frequently of a violent character, following these injuries. Therefore, it is important in handling these cases that we see the patient at least once a day until the active inflammatory stage is passed that we may detect the first signs of danger, such as irritation and lowering of vision in the uninjured eye.

Treatment.—From the very nature of these injuries it would seem at first thought the thing to do would be to remove the lens in all cases, but if the lens is not producing pressure, as may be the case in complete dislocation of the lens into the anterior chamber, as in this position it is apt to set up an irritation and may especially do so if the lens be a large one by occluding the filtration angle and give rise to glaucomatous symptoms, and also when the lens is in the vitreous. Of course, where these conditions exist or whenever the position of the dislocated lens causes continued irritation, removal at once may become imperative, but unless this condition does exist a conservative course of treatment should be adopted and carried out, atropin being the principal drug together with the application of cold compresses, the atropin to be continued until all inflammation subsides. The danger of interference by radical measures to simply restore vision until the eye is completely quiescent, in my judgment, has never been exaggerated.

DISCUSSION

Dr. George F. Suker, of Chicago, said it was rather surprising that subluxation and even dislocation were relatively rare considering the frequent injuries from blows as far as the eye was concerned. He believed that in subluxation and dislocation from injuries of this kind there was an inherent anatomical defect in the suspensory ligament. These injuries always entailed more or less damage to the ciliary bodies and processes because of the tension of the blow resulting in detrimental inflammatory processes. It was certainly dangerous to immediately enter an eye that had a dislocated lens for the removal of the same, be it in the anterior chamber or the vitreous chamber. It was far better to abide one's time

and let the first surgical reaction from the trauma subside, which was usually in twelve or twenty-four hours, and then attack it. In the subject of subluxation of the lens the question that arose was, What to do. He did not think it was good policy in moderate subluxation of the lens to go in and endeavor to extract it, as one was liable to meet a good many more difficulties than otherwise. A partial subluxation of the lens might remain almost indefinitely without the complete formation of a cataract and if the patient had good vision in the other eye it was absolutely unnecessary to remove subluxated lens unless pathologic conditions demanded it.

Dr. A. B. Middleton, Pontiac, Illinois: I think the low percentage of cases that might develop sympathetic ophthalmia in the doctor's paper is misleading. The percentage of sympathetic ophthalmia cases that might develop must not be judged from a percentage of eyes that are simply inflamed, but the percentage of eyes that have had penetrating injuries.

Dr. Benj. Gleeson, Danville: I wish to report a case I had three months ago of subluxation of the lens in a man 30 years of age, who was thrown from the top of a box car on which he was riding, and struck against an iron rail. I saw the man two or three weeks after the accident. He was taken to the hospital in ample time and treated for the external wound; no attention was paid to the eye. Two or three weeks after the accident I saw him with this condition present. He had a complete rupture of the sphincter of the iris with a general iridocyclitis. He had a good deal of pain which usually accompanies iridocyclitis. I watched him for two weeks with the application of atropin and ice, but the iridocyclitis continued to get worse. I made an ordinary cataract incision in the lower portion of the cornea and with the loop and hook introduced I removed the lens practically in toto. In four or five days the cornea healed. The iridocyclitis completely subsided and his vision with the glass is about 20/100.

Dr. Richard J. Tivnen, Chicago: On the point of how much the eye may tolerate dislocation or subluxation of the lens I simply mention the case of a young man, aged 23 years. I saw this patient just before I came to this city. I did not go into the history or make a complete examination, but he told me he had the affliction as far back as he could remember—presumably a congenital affair. The lenses of both eyes were dislocated downward and to the temporal side. I talked the matter over with Dr. Woodruff (H. W.) and he suggested having the patient in the recumbent position and endeavor to get the lens in the anterior chamber, then using eserine and needle or extract, preferably extracting.

Dr. Frederick A. Guthrie, LaSalle, Illinois: This case reminds me of a case that came to me. A man, aged 50 years, was working in the yard; he fell, striking something which penetrated the eye. I did not see him for twenty-four hours. When I saw him there was a perforation at the superior part of the cornea, near the corneoscleral junction. I sent him to the hospital and did an iridectomy, and I found the lens beneath the conjunctiva three or four millimeters from the corneoscleral margin. I removed the lens. The man recovered and with a correcting lens he was able to read 20/30 with that eye. That was four or five years ago and there has been no reaction since. That was, I think, a rather unusual case where the lens was extracted from beneath the conjunctiva, where the injury was done by some foreign body.

Dr. Willis O. Nance, Chicago: Personally, I have had two cases of dislocation of the lens in the anterior chamber and strangely they both came under my care within three months. These are the only cases of that kind I have ever had in my private practice. In both instances the lens was removed by paracentesis of the anterior chamber and good vision resulted in both cases. One was a man whose fellow eye was removed a number of years before on account of an injury. The second case was that of a boy who retired one evening and the next morning some one called attention to the fact that the eye was red and it developed that the lens had dislocated into the anterior chamber. So far as dislocation in the vitreous is concerned I have seen a number of these cases, and I thoroughly agree that in a case of this kind we should leave the lens absolutely alone. I

have made attempts to remove lenses dislocated in the vitreous and have been unable to accomplish any favorable results. These lenses will remain in the vitreous for years without causing trouble and anyone who has ever tried to remove a lens so situated knows how exceedingly difficult it is to accomplish his purpose.

Dr. Burkhardt (closing the discussion): I wish to thank Dr. Suker for opening the discussion, and next I will answer Dr. Middleton on the objections he raises to my placing the percentage of sympathetic ophthalmia or sympathetic inflammation perhaps too low. I wish to say that I want to impress upon the gentlemen that in my paper I only brought out the dangers that we might have to consider in regard to dislocation of the lens without rupture of the eyeball, which is much less than it would be in a case of dislocation with rupture, as in a dislocation with rupture we have the danger of infection from without, and while it is true that Dr. Middleton's objections are perhaps well taken, yet I think he misunderstood my position in the paper. I only give a number of recorded cases, including all classes of eye cases.

I want to thank the gentlemen for their kindly discussion.

THE CHICAGO EPIDEMIC OF SEPTIC SORE THROAT WITH ESPECIAL REFERENCE TO ITS PATH- OLOGY AND BACTERIOLOGY *

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CHICAGO

During the past winter (1911-12) especially the latter part of December and in January there was noted at St. Luke's Hospital an unusually large number of cases of streptococcus infections. This was practically coincident with the occurrence in the city of many cases of sore throat as numerous physicians at that time were noting. About the middle of January my interest was further stimulated by a number of deaths at the hospital, and autopsy on three cases within a period of about ten days revealed in all acute peritonitis from which a streptococcus having certain peculiar features was isolated in pure culture. Furthermore all gave a history of sore throat or tonsillitis a short time previously. A number of other similar fatal cases occurred about the city at that time from some of which I was able to obtain cultures, and they likewise showed this streptococcus as the infecting organism. In discussing the matter about this time with Dr. Rosenow of the Memorial Institute for Infectious Diseases, it was learned that he had had a similar experience as regards cases of streptococcus infection and had likewise independently noted the peculiar properties of the streptococci found. This led to our publication of a brief statement on this subject, which appeared in *The Journal A. M. A.*, lviii, 773, March 16, 1912.

* Read at the meeting of the Chicago Laryngological and Otological Society, April 16, 1912.

I have been interested in this epidemic chiefly from the bacteriologic and pathologic side and will only very briefly refer to a few of the clinical features. The attack of sore throat usually begins suddenly, not infrequently with a chill. The muscular pains, the prostration and the constitutional symptoms are commonly out of all proportion to what one would expect from the local involvement. The fever ranges from 101 to 103 F. or higher, and the pulse is relatively slow. The leukocyte count generally may be said to be low though considerable variation was noted and especially where complications were present the count may be very high, reaching in two cases observed nearly 60,000 with a high polynucleosis. The infection may be largely limited to the tonsils, which are red and swollen, and often a grayish exudate in spots or diffuse is present. Not infrequently the involvement is extensive, the whole throat being red and more or less uniformly inflamed. It is common for the acute symptoms to subside in a few days without further trouble. Often, however, perhaps at the end of a week or ten days, the patient may become worse and it is now that the cervical glands are prone to become enlarged, firm, possibly tender, and may suppurate. At this time, too, numerous other and varied complications are apt to arise. These include empyema, peritonitis, meningitis, otitis media, bronchopneumonia, arthritis, erysipelas, septicemia, etc.

The bacteriologic examination in these cases always yields streptococci. A large number of strains have been isolated and studied with interesting results. In the complications and in all the fatal cases and from many but not all throats the streptococcus found has certain peculiarities by which it may be differentiated from ordinary streptococci. Morphologically in the smears from the throat and the exudates it usually occurs in pairs or very short chains and may be slightly lanceolate in form. In the chains the cocci are arranged in twos. They are strongly Gram positive and surrounded by a definite capsule. The capsular substance is distinct but less abundant than that surrounding the streptococcus mucosus. It is also less abundant than that about pneumococci and does not indent between the pairs as does the pneumococcus capsule. On artificial cultivation the capsule seems to be readily lost, but, in the case at least of some strains, it may reappear on subsequent passage through animals.

On artificial cultivation certain more or less characteristic features appear on blood agar plates. The colonies are larger and more moist than the ordinary hemolytic streptococci (*Streptococcus pyogenes*). They are raised and tend to spread on the upper and under surface of the media. A distinct zone of hemolysis is always present which is clear with often a suggestion of a faint greenish tint in transmitted light. This zone is narrower than that produced by the ordinary *Streptococcus hemolyticus*. It begins immediately about the colony and its outer margin may be indistinct. All the blood corpuscles in this clear zone have been dissolved. On blood agar slants the growth is abundant, raised and moist and does not present the mucoid appearance of *Streptococcus mucosus*. There is much less tendency for the colonies to remain discrete

than is the case with *Streptococcus hemolyticus*. In broth uniform turbidity is produced. The growth is more abundant in sugar broth especially if in addition a few drops of blood serum are added. Milk is always acidified and usually coagulated. They ferment glucose, lactose, saccharose, dextrin and maltose but not inulin, mannite or raffinose. They are readily killed by heating to 60 C. for thirty minutes. The cocci are only slightly bile soluble and autolyze very slowly in sodium chlorid solution. These latter tests, their failure to ferment inulin and their hemolytic property on blood agar serve to clearly differentiate them from pneumococci and to place them definitely in the streptococcus group.

The organisms are highly pathogenic for animals, killing guinea-pigs in relatively small doses. They are distinctly more virulent for rabbits. Intravenous injection of the cocci causes a generalized infection with death following in twenty-four to thirty-six hours. If very small doses are given the organisms like hemolytic streptococci, tend to localize in the joints causing a multiple arthritis; also infection of serous cavities generally and local abscesses in the myocardium. In one rabbit a profuse vegetative endocarditis of the aortic valves resulted with early infarction of one of the kidneys and from the vegetation and from the heart's blood the cocci were obtained in both smears and cultures.

I have been able to obtain cultures from eight fatal cases. In five of these eight cases more or less complete post-mortem examinations were made. A brief analysis of some of these fatal cases I think may be instructive.

Case 1. An old lady over 80 years of age. Six members of the household in which she lived were stricken with the disease almost simultaneously and with almost identical symptoms. The tonsils were primarily and chiefly affected. They were red and largely covered with an exudate. Cultures made from the tonsillar surfaces of two cases in this household group gave practically pure streptococcus. The patient was quickly overwhelmed by the infection and died in about forty-eight hours after the onset apparently from bronchopneumonia. No autopsy. Case 2 was a private patient of Dr. Belnap at St. Joseph's Hospital. The patient was a child aged $3\frac{1}{2}$ years and is the youngest fatal case of this type that I have had an opportunity to examine bacteriologically. The trouble began with a cold or coryza without a positive history of angina. Some days later the child developed fever, rapid pulse and signs of meningeal irritation. Later there was retraction of the head, hypersensitiveness, and soon all the signs of a severe cerebrospinal meningitis appeared. The leukocytes ranged from 20,400 to 44,600 with a relatively high polynucleosis. Spinal puncture was made and abundant turbid fluid obtained containing many leukocytes and much fibrin and myriads of Gram positive, encapsulated streptococci chiefly in pairs. They agreed in every way with the streptococci obtained from other cases. A blood culture made several days before the spinal puncture gave a pure growth of the same coccus. Evidently, therefore, this was a case of septicemia followed by meningeal involvement. Cases 3 and 4 were cases of strepto-

coccus septicemia with positive blood cultures. Cases 5, 6, 7 and 8 were examined post mortem. They all gave histories of colds or sore throats. In all there was acute serofibrinous peritonitis in the exudate of which the streptococcus was obtained pure. Careful search in the abdomen failed to reveal any focus of infection such as an infected appendix, gall-bladder, Fallopian tubes, etc. These cases would therefore pass for what is commonly called idiopathic peritonitis or primary streptococcal peritonitis. In three there was acute fibrinous pleurisy and in one an acute fibrinous pericarditis. In the exudates in all these cases and in the heart's blood in three the streptococci were obtained pure. The atrium of infection in these cases was clearly the tonsils or the throat. In two there was an opportunity to examine the tonsils post mortem. In one the lower crypts of the right tonsil were filled with a tenacious fibrinous exudate from which both smears and cultures revealed the streptococcus growing almost pure. On microscopic section of the tonsil the crypts were seen filled with fibrin and pus cells. There was necrosis in the follicles and in the veins were distinct thrombi extending even out beyond the capsule into the large vessels. In the other case also the tonsils were somewhat enlarged and red and the crypts contained many pus cells. One of the fatal cases was instructive from a surgical standpoint. The patient was a boy aged 14 years in the care of Drs. Elliot and Watkins at St. Luke's Hospital. Beginning as a cold the disease took on the form of a severe infection with symptoms suggesting acute appendicitis, the pain being quite definitely localized on the right side of the abdomen. A laparotomy was made and a normal appendix was found; but the peritoneum was everywhere very hyperemic. Two days later death occurred and at autopsy in the abdomen was found an abundant fibrinous exudate. On the right side between the liver and the diaphragm there was a uniform layer of fibrin and the diaphragm itself was riddled with small hemorrhages. In the right pleural cavity the diaphragm was likewise covered by a similar fibrinous exudate delicately uniting it with the lung. The exudate involved only the lower part of this pleural cavity and the opposite pleural cavity was entirely free. This right pleurisy and involvement of the diaphragm undoubtedly explained the localization of the pain in the right abdomen leading to the diagnosis of possible appendicitis.

Epidemics of sore throat similar to this one have occurred, it would seem, not infrequently. Epidemics in England of what have been commonly called septic or malignant sore throat are not unusual. The epidemic that appeared in Boston about a year ago and which seems to have been traced to the Deerfoot Dairy is of very great interest in this connection. It is especially so in view of the fact that Capps and Miller, as published last week in *The Journal A. M. A.*,¹ find that a very large percentage of cases in Chicago selected at random used milk from a common source. The Boston epidemic clinically was practically identical with the Chicago epidemic, being characterized by the occurrence of glandular enlargement, peritonitis, empyema, arthritis, erysipelas, septicemia, etc. The cause of the Boston epidemic was given as a strepto-

1. Jour. A. M. A., April 13, 1912, lviii, 1111.

cocci but so far as I am aware a detailed study of the organism has not been made. Fortunately some strains of the streptococci have been preserved and a few days ago I received from Dr. Fabyan of Harvard Medical School four strains of streptococci isolated from cases during the epidemic. I have not yet had time to make all of the necessary observations, but from the tests that so far have been made the cocci appear to be identical with the Chicago organisms.

I note from a recent editorial in the *Boston Medical and Surgical Journal* they are again having in Boston a similar epidemic this season though much less severe. Epidemics of a similar character are also reported from Baltimore and Cleveland. Of interest is the report of the epidemic in Baltimore by Hamburger in last week's issue of *The Journal A. M. A.*² He states that it is obviously the same clinical disease as that which prevailed here in Chicago and caused by the same peculiar streptococcus. Evidently from the data given it agrees in all essential respects with the findings in connection with our epidemic here.

As was the case in Chicago, at Baltimore and at Boston the milk-supply is suspected as being the distributing agent or at least as playing an important rôle in this respect. It should be stated that without doubt these throat infections may be transferred directly from person to person, by means of droplet infection and through intimate contact in one way or another. The possibility, however, that milk may be a distributing medium and perhaps may so completely overshadow all other methods of transmission I believe cannot be doubted. Milk is such an excellent culture medium for the streptococcus and the danger of contamination by a carrier or an individual suffering from an acute infection is so easily possible that one wonders why we do not have more of such milk epidemics.

The question of milk-supply deserves especial attention on account of the spread by this means of so many infectious diseases — typhoid, scarlet fever, tuberculosis, etc. — now proved beyond a doubt. It surely seems that scrupulous care will not avoid such disasters especially in view of the Boston epidemic in which case apparently every possible safeguard was thrown about the Deerfoot Dairy milk-supply and it was generally considered to be the very best. It would seem that sooner or later we will be driven to look on milk as a dangerous raw food which in reality it is, and treat it as we do other raw foods, that is, cook it or pasteurize it. The situation is not going to improve; it is almost certain to become worse. Milk is being carried greater distances to cities every year which means more time for transmission and hence more bacterial development. It is passing through more and more hands as it is distributed and this means greater opportunity for contamination by disease-producing germs.

Of interest is the recent report of Müller and Seligmann,³ who investigated an epidemic in children in Germany which is referred to as a grip epidemic and in which occurred a variety of severe complications, including peritonitis, empyema, pericarditis, bronchopneumonia, menin-

2. Jour. Am. Med. Assn., April 13, 1912, lviii, 1109.

3. Berl. klin. Wehnschr., 1911, xlviii, 1636.

gitis, septicemia, etc. They find as the cause a streptococcus which they call the "grip" streptococcus and which they claim is different from the ordinary streptococcus. It is somewhat difficult to judge from their description but, in many respects at least, their organism seems to be very similar to the Chicago streptococcus and I am inclined to believe it identical. Though they refer to the epidemic as grip they did not find in any case influenza bacilli. It might be pointed out here that many if not all of our so-called grip or influenza epidemics occurring at least in recent years are not caused by the influenza bacillus but appear to be caused by pyogenic cocci, chiefly streptococci.

A word might be said concerning the relationship of various streptococci. For practical purposes at least we are coming more and more to use the appearance of the growth of streptococci on blood agar plates as a ready and easy means of identification and also of classification. Pathogenic organisms of the streptopneumococcus group may be divided into four divisions, namely, *Streptococcus hemolyticus* (*S. pyogenes*), *Streptococcus mucosus*, *Streptococcus pneumoniae* (pneumococcus) and *Streptococcus viridans*. The streptococcus with which we are here dealing would seem to occupy a place between the *Streptococcus hemolyticus* and the *Streptococcus mucosus*. It has some properties common to both of these organisms but on the whole it seems to be more closely related to the *Streptococcus hemolyticus*. Furthermore, some of the strains tend to revert to organisms quite like the *Streptococcus hemolyticus*. On the other hand, so far as we have had time to observe these organisms (several months) certain strains seem to retain their peculiarities with remarkable constancy, and it may very well be that they have acquired characteristics which are sufficiently stable to justify calling them a new variety. The phenomenon of mutation has now been observed in a number of bacteria and when we consider the manner in which bacteria develop, the rapidity of multiplication, etc., we wonder that it is as rare as it seems to be.

SEPTIC INFECTION OF THE THROAT *

MARK T. GOLDSTINE, M.D.

CHICAGO

My attention was first attracted to this strange affection of the throat in the latter part of December, 1911, when a series of four cases in one family came under observation. The slow development of the disease, the differential diagnosis, the chronic course of the illness, the effect on the patient, the seemingly contagious nature of the disease presented a perplexing problem. As stated before, the disease develops slowly, taking from seven to fourteen days before the patient is really ill enough to be confined to bed or the house. The onset is marked by a languid, somewhat exhausted feeling with more or less gastric disturbance, sometimes a few aches or pains here and there, some stiffness of the neck

* Read at the meeting of the Chicago Laryngological and Otological Society, April 16, 1912.

may be present, loss of appetite, very little sore throat. The temperature is not very high: between 99.6 and 102. Pulse is usually more rapid than we would expect from a temperature so low. Pulse runs from 100 to 130.

Physical examination is negative excepting the neck, which on examination early shows glandular enlargement on both sides and more marked on one side than the other. The glands are enlarged, very tender, not red, and the largest ones high up in the neck. On examining the throat we observe a very marked congestion involving the whole throat and extending well up in the mouth. The throat looks like a very sore throat, but still patients can swallow and talk, etc., with a great deal of comfort. The throat and symptoms are not in any proportion. As the case develops the glandular enlargement becomes very marked on both sides and the throat very markedly congested, presenting a deep bluish-red appearance.

The temperature and pulse do not vary, but a rapid pulse remains for some time after the temperature gets to normal and does not slow down until the glandular swelling begins to recede. Headache is present, very severe at first, especially in the occipital region. The disease lasts from three weeks to two months and in exceptional cases longer. The glandular swelling persists for a long time, but the glands do not seem prone to break down and suppurate; in all my cases not one was incised. The cases often come in groups, and sometimes a whole family will get the infection, especially when there is a very severe throat.

Differential diagnosis was not difficult to make, as the appearance of the throat was typical of the disease. One has only to observe a few to distinguish it from other inflammations. The congestion is very marked, has a deep red appearance, is not very moist. The whole throat is affected. Owing to the adenopathy it has been diagnosed as mumps frequently, and at first one may think of scarlet fever; but in a short time they eliminate themselves. Diphtheria, tuberculosis and the rest of the throat diseases can be diagnosed by methods well known to you all.

The prognosis is good except where it complicates some other condition, or where some gland is not up to the normal physiologic resistance. Children recover much more quickly than adults.

My treatment has been very simple, the entire campaign one of building up the patient's physiologic resistance and establishing within the individual an immunity to the infection. Plenty of fresh air and sunshine, and nourishing and easily digested foods were given plentifully, with a large amount of fluids, at least 2 quarts of fluid and more, if the patient would take it. Daily bowel movements, warm baths, ice cap to head if temperature was marked. Medicine for pain or sleeplessness if required. Urotropin was given in 5 to 10 grain doses three or four times daily. For the throat solveol was used as a spray or gargle very frequently. One dram in a pint of water was sufficient strength; it seems to do the work splendidly and is inexpensive. It removed the ulcers in the throat quickly when they were present. Nothing was done for the glands in the way of applications or ointments. Diphtheria antitoxin was given in four cases where it seemed indicated before a throat culture

could be made, but it had no effect whatever. Particular attention was paid to the nose, seeing that no mucus accumulated by frequently dropping into each nostril albolene oil containing a little adrenalin inhalant.

Forty-four cases have come under observation, forty of which were considered typical of the disease from the clinical picture. Four of the cases developed peritonsillar abscess and following their drainage the clinical picture did not show typical of the disease, as the convalescence was very short and the adenopathy subsided too rapidly.

Two patients were pregnant four and six months, respectively; both developed a severe mastitis, the breasts enlarging, becoming hard, indurated and lumpy, and very tender to the touch. When the induration was near the surface the skin was more or less adherent to the mass. They did not suppurate; both cleared up nicely, one taking five weeks and the other two months until the breasts were normal again. One patient, eight weeks after delivery, developed a severe throat which in ten days' time involved one breast markedly and the other slightly. The worst one was incised in two places but no pus obtained. The milk secreted finely and has kept up. The breasts were well in about six weeks. One patient had a severe throat, complicating an acute attack of appendicitis where the appendix had been showing trouble for a long time. The appendix demanded attention, and at operation an acute appendix was removed. There was no evidence of peritonitis at time of operation, but the patient developed a severe peritonitis which nearly cost him his life. Fortunately, after a long convalescence he got well.

One patient had a severe synovitis when his knee was immobilized in a plaster cast for flat-foot; he was convalescing from a severe throat with marked glandular involvement.

There were three deaths:

1. An uncomplicated case with a very severe throat and marked glandular enlargement. The glands were enlarged for three weeks previously to seeing patient; she was very septic; I saw her only once but tried to follow up the case and learned that she died in ten days after my visit from what appeared to be an involvement of the meninges.

2. An obstetrical case normal in every respect which developed a fairly severe throat and in which the blood findings indicated strongly an infection which was not diagnosed positively as a pneumococcus. The pelvic organs could positively be excluded in this case as having anything to do with the sepsis. The patient died on the ninth day following delivery. There was no peritonitis. Post-mortem could not be obtained.

3. An Italian boy 8 years old who had a severe throat with tonsils covered with white patches which cleared up quickly under treatment, but the throat remained red and congested. The glands on both sides were very large. He was given 5,000 diphtheria antitoxin the first day. Three weeks after the beginning of the attacks he was taken severely ill with pain in the chest, rise of temperature, very rapid pulse, etc. He developed a malignant endocarditis and died eleven weeks after the throat developed. Kidneys and other organs were negative. Blood findings were negative.

A SYMPOSIUM ON THE CLINICAL MANIFESTATIONS OF AN EPIDEMIC
OF SORE THROAT OBSERVED DURING THE PAST WINTER

1. THE CHICAGO EPIDEMIC OF SEPTIC SORE THROAT WITH ESPECIAL REFERENCE TO ITS PATHOLOGY AND BACTERIOLOGY. DAVID J. DAVIS, M.D.*
2. DR. FRANK X. WALLS DISCUSSED THE EPIDEMIC AS FOUND AMONG CHILDREN

DISCUSSION

Dr. Walls said that the onset in children was sudden, but without convulsions. In epidemics reported in other cities convulsions had been noted as common, but in over fifty cases that he had seen there was no such onset. In the cases he had observed the temperature had been very high—an average of 103 F., and with a good deal of prostration. The children looked very sick, so that, as a rule, a physician was called early. In addition to the symptoms mentioned in the throat, one saw a very intense injection, with later distinct exudate covering both tonsils. Dr. Walls never saw the exudate extend beyond the tonsils. After a few days the cases usually improved and then, a day or two later, there were complications likely to develop.

The more common complications were enlargement of the cervical lymph glands, usually on both sides (in none of the cases seen by him did these glands suppurate); in two cases there was a very definite inflation of the tissues around about the tonsils, extending into the neck, very much resembling a phlegmonous inflammation, and abscess formation was feared, but they subsided. The ears were often affected. Most of them had some redness or injection, and perhaps in twelve or more of them there was suppuration of the middle ear, where the ears ruptured spontaneously, or it was thought advisable to open them, and a purulent discharge ensued. In one case it was necessary to perform an operation for mastoid abscess. In none of the cases was there any pulmonary complication. Peritonitis was present in two cases. Two cases had suppurative arthritis. In none of the cases were there any renal complications except two cases in which hematuria was present. In those it was thought this was due to the urotropin that the patients had had. There were two cases in which, with the onset of temperature, a rash developed like a scarlet fever. He saw two cases where the children—babies—developed erysipelas without any history of sore throats, but these were children who lived in families where the sore throat prevailed. Dr. Walls then cited some cases that had been observed by him.

Regarding what Dr. Davis had said with reference to the milk supply being the carrier of the infection, he felt very much like affirming everything Dr. Davis had said.

3. SEPTIC INFECTION OF THE THROAT. MARK T. GOLDSTINE, M.D.

4. WHAT THE OTO-LARYNGOLOGIST HAS FOUND (ABSTRACT). G. P. HEAD, M.D.

Acute cases of tonsillitis are not often seen by the laryngologist except when complications arise. Of those seen the past winter the average was about the same as in previous years. Every year cases range in severity from those in which there is no fever, merely a few white spots on the tonsils and some soreness in the neck, to those in which the patient is prostrated with high fever, severe generalized aching and extremely sore throat, all symptoms indicating a severe general infection. These patients usually reach the laryngologist on account of complications which fail to subside in the usual time.

Persistent cervical adenitis usually brings the patient in for advice as to removal of tonsils. Peritonsillar abscess often and retropharyngeal abscess generally, are seen in consultation. In regard to these and also accessory cavity affections and middle ear and mastoid complications, I am sure that in my own work the cases have been fewer than in some previous winters.

* From the Laboratory of St. Luke's Hospital, Chicago.

A few cases seen in routine office work, in which the patient stated that his physician had said his sore throat was of the new severe variety, showed nothing different as to appearance of throat and nose from the average convalescent from tonsillitis.

I have been impressed by the fact that my ordinary operative work in chronic conditions of the nose and throat has been less interfered with by acute inflammations during the past four months than in average winters.

GENERAL DISCUSSION ON SYMPOSIUM

Dr. Charles M. Robertson was glad to hear Dr. Davis say that the pathologist had found the streptococcus, which was either a streptococcus hemolyticus or streptococcus mucosus, as that corresponded with the findings of the cases he had had. He had called it the hybrid streptococcus, which is not a peculiar streptococcus but is a streptococcus that belongs either in the hemolytic or mucosa group. In some of the cases he had seen the streptococcus at first seemed to be a typical streptococcus mucosus, but with the same smear you would get a streptococcus that looked like a pneumococcus, which was probably a cross between the hemolytic and the mucosa. To the speaker, the most interesting part of this epidemic, from the viewpoint of the laryngologist, was the fact that there were so many phlegmons in the throat and neck. Nearly all the cases he had seen—which were not very many—started with a follicular tonsillitis, which was rapidly succeeded by a quinsy. The quinsy did not seem to produce as much infection of the lymphatics as usual but rather a cellulitis in the tissues surrounding. In several cases the infiltration was almost like a Ludwig's angina. In at least four or five cases there was edema of the glottis, and in one case there was edema of the epiglottis followed by edema of the glottis. While treating one case he carried a tracheotomy tube with him for two weeks, expecting to be called at any time to do a tracheotomy. This man had an edema of the glottis, which passed off, and finally he had a phlegmon in his throat which extended from the clavicle to the mastoid process and from the sterno-cleido to the median line in the neck. This extensive phlegmon did not go on to suppuration, nor did he see any case that did go on to suppuration, although in the clinic he heard of very many cases of adenitis that broke down into suppurative glands. He saw one case that started as a follicular tonsillitis, which rapidly became a general sepsis. The man died from an infection of his kidney, pouring out almost solid albumin, with an infarction in the lung. Another case he saw lasted for three or four weeks. There was excessive exhaustion after the attack, and the young lady had very large and nasty tonsils, which he advised having removed. After the patient got better she consulted him regarding operation on the tonsils. He advised against operating on it for at least two or three months because she had had a streptococcus infection. This case lived away from the city and after she returned home some laryngologist in her home city operated upon her, and immediately there was the greatest amount of suppuration in her neck, both inside and out, so that she was obliged to remain in the hospital for four or five weeks and almost died. In this case it was necessary to have her neck operated upon twice for suppuration resulting after the tonsil operation.

Dr. J. Holinger thought Dr. Head was right in his observation that the cases of pharyngitis and naso-pharyngitis were not more numerous now than in ordinary winters. Neither were their symptoms or clinical course in any way peculiar. We know, from clinical observation, as well as from private practice, that in laryngologic work there is a certain time of the year when all of us are more often called upon to attend ear, nose and throat cases, for one reason or another. In the Eye and Ear Infirmary nearly twenty years ago the difference was very marked. While in summer only twelve, fifteen or twenty patients were seen in a day, in winter and spring there were sixty, ninety and more. He does not think that this present epidemic is in any way different from former ones. Those gentlemen who want to attribute this epidemic to milk infection ought not to overlook this.

A word with regard to treatment: He did not think enough weight was put on the pharyngitis. Many cases were seen with small tonsils—tonsils that were not swollen, that were not inflamed, but the whole mucous membrane of the naso-pharynx was thick, red and highly sensitive. In these cases there is often considerable general infection. Good results are obtained by energetically rubbing the mucous membrane with iodid of potassium solutions. He could not understand the logic of the spray and simple washes in these cases. As long as we know that all these membranes are covered with a seum of tenacious mucus we never will get down to the bottom with sprays. We simply mediate the mucus and never the membrane, while, as a matter of fact, if massage is used, after one or two treatments, very often a pronounced change in the general as well as the local condition is noted.

Another point in the treatment is the general infection. It can be reached with the well known salicylates. He had not heard this treatment referred to. Aspirin had done very good service in a number of his cases, either combined with local applications or alone. Not enough consideration is given to these medicaments which are in our hands to be used in those cases.

Dr. H. Kahn agreed with Dr. Robertson regarding laryngeal infections in the epidemic of the winter months. He had had quite a number of cases—he thought four—of edema of the glottis, and in one case in particular it was quite interesting. A servant girl in a family developed a follicular tonsillitis, or streptococcus tonsillitis, from which she recovered, and in the course of a week developed a dysphagia. She was absolutely unable to swallow even semi-solids. Inspection of the larynx showed a very large epiglottis, thick and red. The patient was sent to Michael Reese Hospital, where he made an incision in the epiglottis and evacuated a large amount of pus. The bowels were opened and an ice pack put over the larynx. She could swallow quite easily in a few days and by the end of a week was entirely well. In this epidemic there have been very many more laryngeal complications than in the ordinary sore throats as seen in other years.

Dr. Kahn asked Dr. Davis as to the mode of inoculation of the tonsil from the milk, and if he thought it possible that the ordinary streptococcus found in the tonsil could become more virulent under some conditions which prevailed this winter, so as to cause these particular sore throats seen this year.

Dr. J. R. Fletcher said he had been so situated as to observe this epidemic from the standpoint of the general practitioner as well as the specialist. He had seen perhaps forty or fifty of these cases, and was sure he could confirm what had been said by Dr. Walls and Dr. Goldstine.

Dr. Davis had said the onset was quick; Dr. Walls confirmed this; Dr. Goldstine said it was slow. His experience had been that they were all the same type of disease, but that in the severer cases the onset was quick, and in the milder cases it was slow. He had seen quite a number of cases in which the disease primarily attacked the tonsil; in others it attacked the nasal mucous membrane. He had seen two cases which involved the ears without involving the tonsils, and also cases in which the nasal mucous membrane had been perfectly free and in which the disease primarily attacked the tonsils, and secondarily the ears and the mastoid. Among his own relations, one entire family of six children, father and mother, and girl, and his wife, all had trouble except three children who last year had their tonsils removed. These children escaped with the exception of one little girl who had a mild attack. There were two children in that household who had convulsions. The mother of this family had a tonsillitis of this peculiar type, with all of the systemic symptoms described, but one tonsil, the right, especially was so large that it completely filled the throat. The left one was not very much swollen. He put a knife deeply into the swollen tonsil but found no pus. He had seen two other cases of the same kind which astonished him. In three cases he made a mistake in diagnosing peritonsillar abscess.

He had been called to see another case, that of a girl who had been suffering from this trouble for six weeks. He was called because she had suddenly grown very much worse. She had also one tonsil very much enlarged. The glands on

that side of the neck were exceedingly enlarged; on the other side very slightly. The glands on the affected side were almost as big as both of his fists. When he was called to see her she had developed an acute mastoiditis, a paracentesis had been done two days before, and he operated on the mastoid. A great deal of pus was found and removed, but the temperature did not go down. This was the sixth week after onset of the disease. The family physician wanted to open the tonsil on account of the continued enlargement of the glands of the neck, but at his suggestion it was decided not to open it but to remove it, in spite of the fact that there was an immense swelling. He thought that the system was well walled off from the local space and that it would be good surgery to remove the tonsil. The sequel proved that to be so. The night after removal of the tonsil her temperature dropped from 104.5 F. to normal and had not risen since.

Dr. Fletcher also cited the case of a man who had the onset with severe tonsillar trouble, with empyema of the maxillary sinus; the infection spread to the ears. He then had a pericarditis and endocarditis; then a joint infection. His kidneys were not involved. The man had been at the point of death for some time and Dr. Fletcher did not know the outcome.

So far as the milk was concerned he thought that was an important point. In the suburb in which he lives the milk came from different sources.

Regarding treatment: he thought that in some cases, when seen early, the administration of aspirin was good. He had used it in some cases with highly satisfactory results. In some cases he has used an application of ten drops of carbolic acid, two drams of oil of eucalyptus, seven grams of glycerin. He found that if this was used very early and energetically the cases have gotten well in a day or two. It had seemed to abort the attack if well rubbed into the tonsils and over the pharynx. In a day or two the beginning tubal inflammation had been stopped.

Dr. H. W. Loeb, of St. Louis, had had a limited experience with the Chicago epidemic. He thought he saw the case referred to by Dr. Robertson in consultation, however. It was a very large gland that was evidently giving trouble. The patient's temperature rose to 102.5 F., and at his suggestion the gland was removed. A relatively small amount of pus was found in the central portion of the enlarged gland.

The epidemic in St. Louis this year was by no means so severe as in Chicago. It seemed to run in waves. For instance there would be a lot of cases of mild sinusitis, which would soon recover. Then, a few weeks later, the sinusitis was of a more severe type, very much less prevalent. Then a few weeks later the ears would become infected. But anything like the severe epidemic that was found in Chicago and other cities had not been seen in St. Louis.

He was very much interested in the subject. Two points had struck him particularly: 1. The chronicity of the acute infection, if he might put it that way; namely, the acute tonsillitis, lasting so much longer than similar tonsillitis attacks had lasted before; 2, the fact that not one of these particular cases ever had any marked tonsillitis develop, but they were cases in which the tonsils had given relatively no trouble. He thought that they had become so affected by the continuance of the inflammation that they were unable to resist the onslaught of the bacteria.

One of the most interesting cases he had of this sort was last year, in which there was an acute general septicemia resulting from an acute tonsillitis, which had lasted for three or four weeks, and which was of a mild character, in a girl who never before had had tonsillitis, or even an acute inflammation of the nose. It became necessary in that case to remove the tonsils and adenoids during the attack. The temperature would rise to 105 F., with a chill, then go down, and then rise again, and so, after consultation, it was decided to remove the tonsils and adenoids. The operation was performed and the tonsils were found to be the seat of a growth of streptococcus in pure culture. The adenoids, on the contrary, were found to have staphylococci and no streptococci were observed.

Coincident with this, there was an enlarged posterior cervical gland, which it was necessary to remove, three days after the tonsils and adenoids were removed.

A sac of pus and pure staphylococci were found, which led him to think that this particular affair was the result of adenoid infection and had nothing to do with the tonsil infection, which primarily caused the acute general septicemia.

He called the attention of the Society to the numerous epidemics of acute inflammations of the peritoneum that have occurred in Europe, particularly in small towns, and which have been considered due to the milk supply, especially one that occurred in Helsingfors. He did not remember how many cases were affected, but an unusually large number, of an acute septic variety, following tonsillitis, or coincident with it. The whole subject was one that justified very close attention.

He felt that Dr. Davis had presented a most careful study of the bacterial flora, and he was sure much would come from it.

Dr. Samuel J. Walker said that what had struck him most emphatically was that in a number of cases the patients seemed very little sick in the beginning, but after a few days would show symptoms of profound intoxication, and he had seen numerous cases in which he had thought the disease had practically run its course, which had exacerbations of the symptoms, with pronounced toxemia.

Another point in the discussion which interested him was the advisability of operating on these cases in the acute inflammatory stages; removing a tonsil, for instance, that seemed to be the seat of the original infection, during the acute infection. He had always thought that a tonsil should never be interfered with during acute inflammation. But, on the other hand, it would seem that if the source of infection is in the tonsil and infection constantly emanating from this focus and toxemia persisting, it was logical that such a tonsil should be removed. He had heard only one or two gentlemen refer to this point, but he thought it was interesting and very important.

As far as complications in these cases were concerned, he thought that a mild nephritis was extremely common, and not so very infrequently severe inflammations of the kidneys. He cited the case of a young man, aged about 24 years, who came down with what seemed like a moderate sore throat, but with a great deal of prostration. After three or four days this patient developed an intense hemorrhagic nephritis and was then removed to a hospital—a general hospital, and of course he would not have been admitted to the hospital unless the throat had seemed to be of a benign type of infection. Three or four days later he developed an erysipelas of the face which was intense; several days later meningeal symptoms developed, and he died comatose. The whole process, without question, was a streptococcus infection.

Dr. Walker was sorry not to have heard Dr. Davis' talk on the bacteriology of the disease. The whole subject was extremely interesting, on account of the great intensity of this infection this last winter, and he thought there was a great deal left to learn about it.

He wished to say, however, that, in his opinion a great many conditions had been erroneously called streptococcus infections in the sense that they belonged to the same type of infections under discussion. All physicians know that ordinary follicular tonsillitis is, in the vast majority of cases, a streptococcus or staphylococcus infection—in the majority of cases a streptococcus infection—and is accompanied by much prostration. He gathered from what he had seen in the literature recently about this *new* form of epidemic, that the organism causing this particular virulent form of the disease was different from the ordinary streptococcus, and asked Dr. Davis if that was the case, to which Dr. Davis replied in the affirmative.

Dr. Harold N. Moyer said that, so far as he was aware, there were no special nervous complications noted in this particular epidemic. The only ones he knew of were those that grew directly from meningeal involvement, due to the extension of the infection to the meninges. He was not positive that this kind of a bacillus ever attacks the parenchyma of nervous tissue proper, and so these cases, if there were any, were really simply those of continuity of infection, and conse-

quently he did not believe that they could be properly spoken of as nervous complications, only in a secondary way.

He had been deeply interested in the problem, and, on going over his experience in the past, it occurred to him that he had never seen anything definite in the way of parenchymatous involvement of the nervous system result from this sort of thing, merely secondary involvements.

Dr. H. W. Cheney said that in the early days of the epidemic, before it was realized that it was something that we had not had before, it was often confusing to see the enlargement of the cervical glands and many of the cases were diagnosed as mumps. One of the good features of the epidemic, he thought, if there could be any good features, was that in the majority of cases the cervical glands did not suppurate. Those that did were the exception. He had only two that suppurated and had to be incised. One of these was unfortunately in his own boy. And this brought up the question of the milk supply. On inquiry, he found that he had been taking milk from the suspected dairy, so that possibly the two cases in his family had come from that source.

One of the severest cases he had seen was in a baby. The mother first had tonsillitis. The baby took it from her, and then developed an otitis, after that an erysipelas which spread over the entire face and head. The child was exceedingly sick, with symptoms almost resembling meningitis part of the time, but fortunately recovered.

Dr. Norval H. Pierce's impression was that there had been an epidemic that possessed marked characteristics locally and generally, aside from the ordinary follicular tonsillitis and accessory sinus disease, which is normally prevalent at this time of the year. Locally, the cases that he had seen had impressed him with a rather slight hyperemia and slight swelling of the mucosa of the pharynx. He believed that the source of infection had been the tonsil, but the tonsils had not exhibited the ordinary symptoms of an acute follicular tonsillitis. The crypts did not contain the tough, solid exudate that is usually seen in ordinary tonsillitis, but the exudate in these cases was soft or quite fluid; in fact, the tonsil had to be everted occasionally to squeeze the fluid substance out of it. It was the color of skimmed milk. This would contain the virulent germs almost invariably. The pharynx, on the other hand, would be diffusely red and slightly swollen, and this might extend up into the post-nasal space and down into the larynx, or down into the vestibule of the larynx and around the arytenoid bodies. Altogether, this was a peculiar appearance.

Another point was the marked systemic involvement. Accompanying these comparatively slight pharyngeal symptoms were found enormous glandular involvements, which would come on very suddenly, over night, so that the neck would be swollen out on a level with the maxilla, and would then disappear almost as rapidly. He had seen a mastoid abscess develop following this disease, with marked destruction of the mastoid, with very slight external symptoms, pain and swelling, or redness. He had also seen marked nephritic complications, granular casts, the presence of albumin and blood, accompanied by marked general prostration, a slow pulse, with a very low leukocyte count. This picture of disease he believed to be peculiar to this present epidemic. While he thought that the vast majority of the sore throats had been the ordinary sore throats that are seen every winter, he still believed that there had been a type of pharyngitis that had been peculiar.

Regarding the removal of tonsils during acute inflammation: theoretically, it would appear that this was the right thing to do. It would be taking away the source of infection. But, practically, he had known cases where this had been done where the most disastrous results had followed. He could recall cases where patients had been operated on during or very shortly after an acute attack—say within a week—and the cervical glands had immediately become invaded or suppurated and broken down, so that the patients have been sick for weeks. He remembered one case where the tonsils were operated on together with the adenoids, shortly after a severe acute tonsillitis, in which a phlegmon developed

in the throat, which resulted in death. He did not think it was a wise thing to do. It is much safer to disinfect the tonsils by means of nitrate of silver on a bent probe and carried down to the crypts during and for at least two weeks after an acute attack, than to operate. He knew of one case, in Vienna, in 1890, where a man had fever for several weeks, and a tonsil was somewhat swollen. The professor, in whose clinic the case was seen, thought it simply a parenchymatous swelling and removed the tonsil with the guillotine, and at the base of the tonsil there was found quite a large abscess. The man recovered nicely, without any trouble, and the fever, malaise, etc., disappeared. However, Dr. Pierce thought this was an entirely different proposition. He would much more readily operate on a case of abscess of the tonsil, or even a peritonsillar abscess, by taking out the tonsil, than he would a tonsil that was honeycombed with these germs, where the crypts of the tonsil were the abiding place of germs in an acute stage of virulence, because when such a tonsil is taken out we open up innumerable lymphatics, innumerable channels for further extension, and, in the other case, the inflammation has probably become walled off, the lymphatics perhaps sealed up, so that there was not so much danger of extension.

Dr. Joseph C. Beck said there was one condition that he had observed during the late epidemic that had not been touched upon. He agreed with Dr. Pierce, regarding the appearance of the throat, in every particular. He was impressed by the same condition and the milky-looking deposit on the tonsils. He had never had, personally, an attack of tonsillitis until this season, but this was a very severe one of the type described. There were seven in his household, and they all had it.

There was one complication which he noticed, namely, a very marked glossitis. He had seen one case which terminated fatally, in a child aged 4 years, who had this acute simple tonsillitis, with deposit on the tonsils, who within forty-eight hours developed glossitis, so that the mouth was filled with this large tongue. Fortunately, he had removed the adenoids in this case about a year before and the child could breathe through the nose. The tonsils were not very large, but the mouth was filled with the tongue. This infection spread from the mouth, as we see in cases of Ludwig's angina, the general infection spreading along the neck, down to the naval, with no distinct line of demarcation, acting like an erysipelas. After six days the child died, apparently from prostration.

He had also seen a case with intracranial complications in which this condition existed in the throat, and four weeks later a mastoid developed. A simple mastoid operation had been done, and when Dr. Beck saw the case there was a paralysis on one side of the abducens and he thought of the possibility of an abscess. There were other meningeal symptoms. Spinal puncture showed a pure culture of the streptococcus described by Dr. Davis. This case lasted about ten days after operation, and died, evidently from a general septic meningitis.

Dr. Wm. L. Ballenger wanted to bring out one or two points that he had not heard mentioned by any of the speakers. In one case he was called late at night—a mastoid case, in a gentleman about 54 years of age. He had had a tonsillitis of the type under discussion about ten days previous to this time and had gotten apparently well of this. He then was stricken with mastoiditis, which developed very rapidly, and when seen by Dr. Ballenger he had a beginning meningitis. He did a mastoid operation upon him but the meningitis proceeded, as it had been expected it would, and in a few days the patient died of meningitis. The next morning Dr. Ballenger operated on a child, aged 11 years, who had had a tonsillitis a short time before, later developing a mastoiditis and sinus thrombosis. She had been having the low temperature of the morning, followed in the afternoon with a hard chill for five days. He did a mastoid operation and opened the sinus and jugular bulb. The temperature continued with the typical curve for one month. About ten days ago she ceased to have these variations in temperature

and now is well and up. This case was very persistent, as perhaps is significant of the fact pointed out by Dr. Loeb, that this infection is a very persistent one.

One other case he wished to speak of—that of a little girl, because she developed a sinus thrombosis, which had been mentioned as one of the complications. He spoke of this case because of the meningitis which developed, and which was speedily fatal.

Dr. Ballenger had had several other cases during the winter that probably would belong to this same class, but none of them of any particular interest.

One other fact he referred to, in connection with what Dr. Head had said, namely, that he had not observed in his own practice very many more cases of tonsillitis or nasal disease this winter than he had in ordinary winters. There were some ways of explaining that, the speaker thought. He had observed that when we had the epidemic of la grippe some years ago, during that winter he did not see so very many cases in proportion to the disease prevalent at that time, but he attributed that to the fact that in a large city like this, distributed over a large area, that specialists do not see so many of the acute cases as in smaller cities where they are in closer relation with the family physicians.

Dr. Head (closing the discussion on his part) said there were one or two points in regard to treatment that had not been spoken of. It was his experience that in a case of tonsillitis, instead of the ordinary salicylates, which perhaps will relieve the pain, salol had been the one thing that he had relied on after trying various other things for a good many years. In salol he felt that we get the salicylate which is the same as that in the aspirin, and we also get an appreciable quantity of carbolic acid in the shape the blood can tolerate. He always felt it was peculiarly indicated in a disease like tonsillitis, which is accompanied by such severe symptoms.

In the matter of the spray, he thought that a well directed spray on the tonsil would accomplish good results. In a number of cases which he had seen with tonsillar involvement, the temperature running high, he had found that a spray, well directed, would cause the temperature to drop to normal within a few hours, showing what the cleansing could do there. It helped Nature to get rid of the infectious material, and cleaned out the crypts to some extent.

In regard to removing the tonsils during an acute attack, his experience had been similar to that expressed by Dr. Pierce. It seemed ordinarily a dangerous thing to take out an acutely inflamed tonsil. He remembered a case seen last summer in which the patient had a temperature (the patient was a small child, 4 or 5 years of age) running up to 100 F. practically every day for some weeks. The family physician brought the child to Dr. Head with regard to removing the tonsils, which were inflamed. They waited and sent the child to the country for several weeks. The temperature still went up every day, but there were no evidences of involvement of any other organs. He removed the tonsils then and the fever subsided immediately and the child had had perfect health since. So that in a case of that kind one would be justified in removing the tonsils.

Dr. Goldstine (closing the discussion on his part) said that regarding the administration of aspirin in these cases, he had very seldom been called to see these patients before a thorough course of aspirin had been taken. The use of aspirin now is more common than that of castor oil. It did not seem to have any effect on the cases in his practice. Urotropin seemed to be the best thing. He thought the general building up of the patient's resistance to the infection did more to help than any specific remedy.

Where the question of removing the tonsils came up he felt about it just as he felt about his own work, that he would not remove the uterus when he thought the infection had gone beyond it. He thought in these cases the infection was beyond the tonsil before the case was seen. He never used any strong applications in the throat because he was afraid of them, as he thought that strong applications reduced the resistance of normal cells.

Dr. Davis (closing), with reference to the question of operating in the acute conditions, thought something might be said from the pathologic side. In the laboratory they did not get very many tonsils in the acute stage of infection for examination. Men, generally speaking, were opposed to removing tonsils at that time, and so they had to rely on post-mortem material. He was able to get a couple of tonsils from cases and in the examination of these the crypts were teeming with these streptococci. There was a rich exudate there, consisting of pus cells and fibrin, but the infection evidently had traveled through the epithelium, the epithelium itself being permeated with leukocytes. There were areas of necrosis in the lymphoid tissue underneath the epithelium, and in the small blood-vessels, and even in the larger veins there were distinct thrombi, septic thrombi. Of course, theoretically, if one could remove all that material, it might be a rational thing to do, but it would be a very difficult thing to do and the probability is that if one operated at that time these organisms would be scattered about the lymph spaces, the blood-vessels would be opened, and the chances are that the condition, so far as a generalized infection is concerned, would be very much more favorable than before operation. He would advise, from a pathologic point of view, distinctly against interference during the acute stage.

He wished to call attention again to the fact that not in all of these cases of acute tonsillitis was this kind of streptococcus found; in some, the ordinary hemolytic streptococcus occurred. However, in all of the fatal cases and in practically all cases complicated by empyema, septicemia, etc., this particular type of streptococcus was found.

With reference to the milk supply, he thought one should be cautious in drawing conclusions; however, the facts must be carefully considered. In the case of the Boston epidemic, for example, which was studied very carefully from this point of view, it seemed to be the unanimous opinion that it was due to the milk supply. Seventy-five per cent., or thereabouts, of the cases were provided from one milk supply. Now word comes from Baltimore, that practically all of the infected cases there received one particular milk supply. As we have seen from the studies of Drs. Capps and Miller, here in Chicago, a very large proportion of the cases obtained milk from a common source, and it appears that as this matter is studied more carefully and detailed facts obtained, the evidence is accumulating in favor of this theory. It should be kept in mind that milk is an excellent medium for the growth of this organism. It is also known that milk can carry typhoid, scarlet fever and other infections, and there is every reason to think first of the milk supply as being the carrier of this infection.

Regarding the question as to the way in which the tonsils are infected from the milk, of course the organisms pass over the tonsils and they may then pass directly into the crypts. We should remember that the crypts of the tonsils are a most excellent breeding place for streptococci. For some reason they seem to thrive better here than any other organism.

One other point: in the last several weeks in the hospital they had noticed an unusual number of cases of tuberculosis. These were principally tuberculosis of the lymph glands, and pulmonary tuberculosis. He did not know whether or not there was any relation between these cases and the recent epidemic. He had not been able to look carefully into the matter as yet, but it would seem reasonable that the epidemic might have stirred up old tuberculous foci in these individuals, or possibly the streptococcus infection of the lymphatic organs and structures of the respiratory tract, made them susceptible to a subsequent invasion by tuberculosis. We are not unfamiliar with this in connection with other diseases, as, for instance, the not infrequent invasion of the body, following measles, by tuberculosis.

ARTIFICIALLY DEFORMED SKULLS, WITH SPECIAL
REFERENCE TO THE TEMPORAL BONE
AND ITS TYMPANIC PORTION *

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In the ascending scale of animal life there is probably no group of bones which have had more influence on each other in their progressive changes than those comprising the brain case and the face. Because of their relationships to each other it becomes impossible when one is studying them during their postnatal development to isolate a single bone, and they have to be considered in their entirety. The purpose of this paper, however, is to direct attention to the irregular projections of bone in the external auditory canal found in a majority of those markedly deformed skulls of over 100 skulls examined. Though such projections have been mentioned and briefly described by many anthropologists as exostoses, further considerations would seem to indicate that they are not true exostotic growths, but are an abnormal development, or deformity, of the tympanic bone brought about by the artificial mechanical treatment to which such skulls have been subjected. The consistent deformity — and by that I mean a similar effect produced by a variety of pressures in varying subjects — of this bone indicates also the more far-reaching effect of pressure on the skull on both the brain and the bones of the face.

Historical.—It is interesting to note how far back in antiquity cranial distortion was practiced, evidences being seen earlier than the Iron Age. In fact, it is probably impossible to decide the earliest stage of human progress in which this practice was indulged, as some of the earliest skulls known show evidences of this treatment. Hippocrates first writes on this subject in describing the Macrocephales, a people who lived east of the Palus-Mocotis, from which custom it is said that they derived their name. Topinard says also that Herodotus described the same people and that Aristotle, Strabo and Pliny mention them. The two leading types which we find characterizing deformed skulls, dolichocephalic and brachycephalic — only the latter type is mentioned by writers as having been artificially deformed — have been removed from the round and the long barrows of England, and with them were buried implements contemporaneous with the Iron Age. There are also further indications of many of them belonging to the Neolithic and Bronze periods.

Distribution.—The practice had a wide geographic distribution from Syria on the east, throughout Europe and Africa to America on the west. The Caucasus, Crimea, Hungary, Silesia, Belgium, France, England, both coasts of Africa, many islands on both sides of the world, South America, especially Peru, Mexico, and the United States, in the southwest and the Columbia River regions particularly, have given to the excavator many crania variously misshapen by artificial means. Whatever the cause

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or reasons for this interference with Nature's processes, and whatever the disadvantages, it serves and has served a very useful purpose by augmenting historical data in identification of the derivation of peoples and races, and apropos of this consideration it may not be disadvantageous or uninteresting to quote from a man who has studied and written much on this subject. Topinard says: "We conclude, therefore, in comparing these data with those which history furnishes that the Aryan nations with one of their tribes having this custom have passed over the Volskes-Tectosages of the Caucasus under the name of Cimmerii, through Europe into France, where the processes of disfigurement have become modified in the way we have mentioned." [Referring to three pathologic deformities of the skull which he calls posthumous, platybasia and plagiocephalic.] "Other skulls, however, have been met with in Europe as the Helvetio-Burgundian skull of Voiteur in the Jura, in the form of a sugar-loaf; and perhaps that of Bel-Air, near Lausanne, in Switzerland, the nature of whose deformity is different, which leads us to believe that all European peoples disfiguring their heads have not had the same origin. Deformations of the skull have been discovered in Polynesia, especially in Tahiti, in Malacca and in different parts of Asia as far as Syria.

"But the classic country in which these deformations are found is America. From a period prior to the Christian Era, we see a nation, the Nahuas leaving Florida, according to Brasseur de Bourbourg, to settle in Mexico, and quitting it in the year 174 to disperse, some to the north along the Mississippi, others to the south, across the Isthmus of Panama, and there disseminating the custom of flattening the head from behind forwards. Other deformations of a different type are met with in the same country, which it seems reasonable to refer to another primitive people. From these deviations from one and the same custom, we may infer that its origin dates back to a very remote period."

Neither sex escaped in this primitive procedure; an examination of a series of skulls, of both male and female, show the artificial deformities, but the number of female skulls is in the minority and these show less exaggerated molding. This may not be due, however, to the practice being more general on the males, as the male skulls were greater in number in the groups examined.

The types of deformation at once divide themselves into two distinct classes, the long narrow-headed or dolichocephalic, and the short broad-headed or brachycephalic. In the extremes of these two it is not possible to attribute any other cause than artificial mechanical compression, the conception present being to distort the permanent shape of the head to conform to either an idea of hideousness or beauty; or perhaps for the purpose of distinguishment or identification, since families, tribes and nations had different and distinctive head deformities. There are many modifications of these two extreme types; for example, the occiput alone may be flattened, or the flattening may be confined to the frontal region or again the pressure may have been so distributed as to affect mainly the parietals. In many of these modified conditions there arises the ques-

tion as to whether the malformation was accidental; for example, due to the manner of carrying the infant or to its lying on a hard surface as the primitive crib with no soft head rest; or whether these conditions were preconceived and methodically elaborated; or again, whether they may have been due to some pathologic condition. Still another point arises in the consideration and discussion, and that is as to whether or not any degree of these modifications may have been congenitally transmitted. This question has been much discussed and is now answered almost, if not quite entirely, in the negative.

The question as to the earliest origin of this practice involves a consideration of the psychologic state which has induced the popularity of such procedures, a question even more difficult to determine than the time at which this procedure was inaugurated inasmuch as one is here dealing with an intellectual force which is played on by the myths of the past, and which is profoundly affected by the consequent delusions. The aboriginal mind almost defies investigation in regard to the mental state which originally led to this physical deformation. The determination of the reasons for this form of physical distortion must be largely influenced by personal opinion, based on a consideration of the various reasons given for these practices together with a careful analytical survey of the ages of darkness which the primitive mind has traversed. Again the fact must not be lost to sight that this was not the only method of torture or distortion: many other parts of the body were subjected to artificial treatment to produce departures from normal form, but in the majority of these the soft structures mainly were involved and so skeletal indices are wanting. Of these customs, however, we have even so late recorded observation as given by Col. Theodore Roosevelt in his recent publication as follows: "One group of women, nearly nude, had their upper arms so tightly bound with masses of bronze and copper wire that their muscles were completely malformed. So tightly was the wire wrapped round the upper third of the upper arm that it was reduced to about one-half its normal size, and the muscles could only play, and that in a deformed fashion, below this unyielding metal bandage. Why the arms did not mortify it was hard to say, and their freedom of use was so hampered as to make it difficult to understand how men or women whose whole lives are passed in one or another form of manual labor could inflict on themselves such crippling and pointless punishment."

The mental state acting as the forerunner of these procedures, however, is not referred to and it is accepted that it is done for purposes of personal adornment or as features of distinguishment. So also O. W. Barrett in a recent article speaking of the personal decorations of the Mozambique women says: "This scar tattooing is practiced very largely by the M'Chopis, and is imitated to some extent by their neighbors. However, the lower tribes do not usually make so large nor so thick a bosse as the M'Chopi women. The M'Chopi tattooers use one or more native resins to rub into the fresh surface of the cut to stimulate the growth of scar tissue. Consecutive semicircular cuts are preferred. The bosse or point in the center of the scar mass is sometimes one-half an inch thick.

There seems to be little design among the M'Chopi tribe in the arrangement of these scars, which extend from a line just below the breasts to just above the knees."

So late as 1585, in ancient Peru, before the Spanish conquest, an edict of ecclesiastical authorities against head deformation (mentioning three distinct forms) was issued and again a government edict against it was published as late as 1752. Flower, in "Essays on Museums," after discussing the original people of whom so many deformed skulls have been found in Europe, and inclining, with the later French authors, in assigning them to the Arvan race, remarks: "Whether the French habit, scarcely yet extinct, of tightly bandaging the heads of infants, is derived from these people, or is of independent origin, it is impossible to say." Further he says: "But the Chinook Indians of the neighborhood of the Columbia River, and the natives of Vancouver Island, continue it to the present day" (1898). Thus it may be seen that primitive peoples have practiced and do practice varied forms of distortion of various parts of the body even in our own time and the state of mind which induced it is just as far from the understanding of the so-called superior races as it ever was. It is, however, recognized generally that in all stages of development the human family has been and still is strongly subject to influences of superstitions and myths and their actions controlled to a greater or less extent thereby. So whatever reasons it may be possible to add to this general statement it is quite probable that the then conceived religious ideas, at least, were a strong factor in the causation of these practices. And this is shown in the following observation by M. Coragua: "When our children are young, said the chiefs to the Friar Bobadilla, their heads are tender and are then molded into the shape which you see in us by means of two pieces of wood hollowed in the middle. *Our gods instructed our ancestors* that, by so doing, we should have a noble air, and the head be better fitted to bear burdens." In addition to this the reasons for cranial malformation are various; for instance, Torquemada states that in Mexico the Indians used to deform their heads to appear more formidable. Spencer affirms that permission to shape the heads of their children was a favor granted by the Inca to some nobles, the artificial contours being that of the royal family. While the Coragues and Collas of Peru say that they form their heads into these shapes (long and broad, but flattened behind) that they may be more healthy and be able to do more work. And yet another nation follows out this custom to increase the ferocity of their expression. Santa Cruz says: "Manco Coapac ordered the heads of infants to be pressed that they might grow up foolish and without energy; for he thought that Indians with large round heads being audacious in any enterprise, might also be disobedient."

The method of producing these deformities, of course, varied according to the particular type of skull formation it was desired to obtain. In this consideration those apparently accidental cases which were brought about by the infants being strapped to a board for carriage, or those induced accidentally in other ways may be excluded. As it is only those extreme types of malformation, where force and counterforce have been

employed, that show marked disturbance or deformation of the tympanic bone, so the methods of production of only those types will be here considered.

As above indicated these types are two in number and diametrically opposed in form, except in one very important particular and that is the condition and relations of the lower or basilar part of the skull. In both the brachycephalic and dolichocephalic types, whether extreme or only slightly affected, the basi-cranial relations are similar in their manner and degree of departure from normal. Discussion of these deviations is reserved until later but the fact of the two types being similar in this respect can be shown by an understanding of the methods producing them. This fact on only a cursory thought is contrary to supposition as the one type is the broadest and shortest known skull while the other is the longest and narrowest known skull, these measurements having to do, however, only with the calvarium. A quotation from Landa made by Spencer describing the method of procedure for producing the brachycephalic deformation will give a general idea of the mechanical contrivances in all similar cases: "Four or five days after birth, the child was put on a small bed made of rods, and there, the face being underneath, the head was put between two boards, one being at the occiput and the other at the front. Between these they compressed it forcibly, and kept it there for some days, until the head was flattened and shaped like their own." This was the general way in which this type of deformation was accomplished, but there were, of course, variations in applying this pressure. The point being that the pressure was applied anteriorly over the frontal bone (which in infant life is composed of two bones, the suture extending between them to the nasal bones) and posteriorly over the occiput so that the pressure was exerted anterior and posterior, respectively, on a plane passing from the glabella to the occipital point, this plane approximating the basi-cranium and including the parts of the temporal bone.

The method employed for producing the dolichocephalic or sugar-loaf head was to bandage the cranium from the occipital point around posterior to the auricle over the superior part of the mastoid, to the frontal region and back on the opposite side in a similar manner to the occipital point. This bandage covered the frontal bone from the glabella up over the frontal eminences, where apparently a space was left and then the bandage again applied just posterior to the coronal suture, so that in many skulls, at least, a laterally extending elevation occurs between these two points. It is evident in these cases as in the artificial brachycephalic type that the inferior area receiving pressure approximates the antero-posterior plane of the cranial base, but from the position of these compressions the skull is permitted to expand upward and posterior developing along the lambdoidal and allied sutures. Again this skull differs in form from the artificial brachycephalic as the technic of this procedure limits or compresses the median lateral diameter, therefore resulting in the marked narrowing of the skull. The lateral compression and that over the frontal and infra-occipital regions permit development only from the sagittal and lambdoidal sutures. So that while the manifest external

results of these two types are diametrically opposed it is only the cranial vault or calvarium which is affected in an opposite manner and the cranial basilar structures suffer in each instance in a similar way.

It was the original intention of the writer to describe and demonstrate malformed tympanic bones which occur in many artificially deformed skulls of the brachycephalic type, which were observed while studying other mechanical effects in development. While making additional observations on artificially dolichocephalic skulls, in order to show the supposed opposite or dissimilar conditions in the tympanic bone from those in the brachycephalic skulls it was found that they showed as consistently a similar but less amount of pressure on certain parts of the petro-mastoid, squamo-zygomatic and on the tympanic bones causing in a less pronounced degree similar malformation of the latter bone to that found in the artificial brachycephalic skulls and a marked change in form and development of the petro-mastoid and squamo-zygomatic parts of the temporal bone. The above notation of facts introduces the truism voiced by the distinguished anthropologist, Dr. George A. Dorsey, that "in artificially deformed skulls every part is deformed," rendering it impossible to consider individually in its growth any separate bone of an artificially deformed skull, the same as is true in an unrestrictedly growing skull. It was made necessary, therefore, to include with the malformed tympanic bone changes in form and relations of the other components of the temporal bone found in the two opposite representatives of deformed skulls.

A marked difference is noted in the two types of deformation at the temporal part of the lateral antero-posterior suture. In the brachycephalic skulls there is closer approximation of the suture between the squamo-temporal and the articulating bones than in the normal, the parietals causing a bulging outward of the temporals. In the dolichocephalic skulls on the contrary there is marked widening of the sutures in this locality, in many instances the parietal bones being considerably drawn away from the squamo-temporal and an indenture following along the suture well to the sagittal side of it. Notwithstanding, however, the diametrical differences in shape of these two types of skulls, owing to the fact that the temporal bone unites the anterior and posterior segments of the base of the skull, the methods practiced in producing the deformities involve the temporal bone in a similar manner in both instances, especially affecting its outer end containing the external auditory meatus, formed in the main by the tympanic bone. The effects produced are of the same kind, differing only in degree. The exact location of pressure varied but the external auditory meatus with its tympanic bone being in the direct line of fixation or compression, as a consequence was found to be malformed in both types in a similar manner but less markedly in one than in the other.

Other parts of the temporal bone receiving pressure in a different manner and direction or being allowed freedom and complementary development in other directions, vary according to the differences incidental to the type of compression exerted. These variations between the two types will be noted in the individual reports of the specimens examined which

are appended, but there are some which are sufficiently interesting and possibly instructive in their bearing on the development of the skull as to warrant special consideration.

In all examined skulls artificially shortened, the relations of the squamo-zygomatic bone to the parietal posteriorly and to the ali-sphenoid anteriorly are changed, the sutures being much more closely approximated and the antero-posterior axis of the squamo-zygomatic relatively shortened. The foramina between the petro-temporal and articulating bones are strongly contracted and this fact together with the almost total obliteration of the sutural crevices between the petrous bone and the basi-occipital posteriorly and the basi-occipital, basi- and ali-sphenoid anteriorly give the petro-temporal the appearance of having been driven like a wedge into an almost solid structure. In many skulls in which the tympanic bone is not affected there is a downward development of the mastoid portion of the bone, a large mastoid cell area, and this carries with it the tympanic bone, so that the meatus is not materially altered.

In the skulls artificially elongated, while not so many were examined, yet there was consistently shown marked upward curving of the linea temporalis toward the lambda, increased antero-posterior diameter of the base of the mastoid portion of the temporal, posteriorly extending to the occipital by a broad tongue-like extension of bone similar to that occurring at times in the temporal fossa and articulating the squamo-zygomatic with the frontal bone. In the former instance the masto-occipital suture in each case becomes exceedingly complex and often contains an intercalary bone. This may be a development simulating formation of intercalary bones in sutures where Nature finds it necessary to increase the capacity of the skull. In these specific instances of deformation where the brain is forced to develop postero-superiorly and demands room for growth above, the bony space in the skull must be increased and so the development of the tongue-like process of the mastoid to fill in this space. This provision of Nature has its analogue, or vice versa, in the before-mentioned tongue-like development of the frontal fossa; the developing frontal lobe causing a pushing forward and widening of the anterior angular form of the superior and inferior leaves of the bone, as found in the lower species, into a well-rounded curve presenting the frontal eminences; the tongue-like processes of bone from the temporal push forward and fill in the space. Of course these are only isolated cases in the frontal example, but they show the manner in case of need; and the cause back of the need in these developments requires further elucidation.

Many specimens of dolichocephalic skulls showed dehiscence in the glenoid fossæ opening into the inner end of the external auditory meatus, and the glenoid fossæ were in many instances widened antero-posteriorly. In such cases the Glaserian fissure is particularly wide and it will be noticed that in two of these specimens this widened fissure also contained long oval intercalary bones (which may be identified with that part of Meckel's cartilage having to do with the preformation of a portion of the malleus).

It would be interesting to note the upward curved linea temporalis in relation to the cerebral fossa in these cases and also to ascertain the significance of these intercalary bones — occurring in the two positions — in this type of skull, as they occur in that form in the Inca skulls, giving rise to the much disputed “os Incae,” or “epactal bones” (Dr. W. Matthews: *Am. Anthropol.*, p. 338).

The most noticeable changes, however, occur in the tympanic portion of the temporal bone. In nearly every skull in which the shortening of the antero-posterior basilar diameter is at all marked, the tympanic bones are either irregular in form, showing nodular formations presenting into the external auditory canal, are flattened antero-posteriorly, the long axis of the meatus more nearly perpendicular than normal, or the orifice, if regular, is very strongly contracted owing to the material thickening of the bone itself and a shortening of the Ravinian fissure.

This characteristic of many of the aboriginal skulls has been noted and mentioned in writings by many investigators, but has always been termed exostoses of the external auditory canals and been ascribed to a peculiar obliquity in development in these people. William Turner writes in 1878 in the *Journal of Anatomy and Physiology* that in 1864 Professor Seligman directed attention to the presence of exostoses in the external auditory meatuses of some specimens of American crania which *had undergone artificial elongation*. He further says that though many crania, both European and exotic, have passed through his hands through a number of years, he has not seen one with exostoses in the external auditory meatuses until recently and that skull was from Pisagua, Peru, and was markedly antero-posteriorly deformed. He describes minutely the abnormalities and compares them with Davis' in *Thesaurus Craniorum*. After stating, however, that the only exostoses which he ever saw occurred in artificially deformed skulls, yet he does not think that the deformation of the skull was the cause but “there would thus appear to be a tendency on the part of the aboriginal inhabitants of the American Continent to possess modifications in the configuration of the external auditory passage.”

It is true that many of the skulls of aborigines do not show any noticeable changes in the temporal bone, even some of those which show an attempt at artificial deformation, but this is easily explained by the inaccuracy of the methods used and the displacement of the mechanical devices — particularly those for antero-posterior shortenings — too early removal of the devices, which were kept in position any length of time from a few weeks to the end of the first year, and again on the particular type of bones in the individual. Those having hard diploetic skull bones showed the most marked deformities of the temporals while often those having the more pneumatic type of bones evinced no unusual formation of the temporal bones even though there might be marked cranial vault deformity. But again this latter class of skulls does not show such strongly marked encroachment of the basilar structures on each other as are to be found in the former type of skulls, and in the former type the suture lines were, in proportion to age in the two types, found to be more

advanced in the process of ossification. Another fact to be noted in this connection is that in the type of skull shortened antero-posteriorly the pressure often became displaced so that one side was much more strongly contracted than the other and in these specimens the tympanic bone, particularly, often was markedly malformed on one side, that being the side on which the greater pressure was exerted, and presented the characteristic nodular form, so-called exostoses of the meatus.

The shortening of the basi-cranial antero-posterior axis was brought about in the cranially deformed individual mostly, if not entirely (so far as gross manifestations indicated) by the contraction to a greater or less extent of the foramen lacerum medius and the foramen lacerum posterior and the forcible impingement of the sphenoid and occipital bones respectively on the anterior and posterior margins of the petrous portion of the temporal bone.

In many instances the above foramina — normally wide slit-like openings — were reduced to the smallest possible dimensions. The basi-cranium of those subjects which present the most pronounced results of these types of compression appear like a solid mass of irregular bone, instead of being made up of several separate and distinct bones joined by sutures.

Fronto-occipital pressure in the developing skull results in the inability of the skull to expand either upward and forward or downward and backward in consequence of which the brain growing and expanding, the pressure must be equalized in directions upward and backward and, diametrically, downward and forward. A question arises here as to whether the pressure is exerted by and through the brain *per se* or is entirely transmitted by the separate and different bones through their sutural margins, the high probability being that it is transmitted in both ways. The parietal bones, held between the vice-like compression of the frontal at the coronal suture anteriorly and the occipital at the lambdoidal suture posteriorly, become shortened along the base-line of the arc by the approach of the coronal toward the lambdoidal suture and so they form a higher and more precipitate arch as they develop either at the parietal eminences, or at the crown along the sagittal suture if the influencing pressure is exerted sufficiently from the lateral aspects to also shorten and heighten the arch laterally.

As the complemental expansion occurs upward and backward a diametric pressure is exerted downward and forward by means of the parietal bones transmitting the effects of the pressure along the lateral antero-posterior suture to the petro-mastoid at the junction of the lateral antero-posterior suture with the lambdoidal and the squamo-temporal respectively, insinuating the former (petro-mastoid) inward and forward toward the basilar axis and also impinging the posterior half of the tympanic bone, driving it forward to be caught and repressed anteriorly by the squamo-temporal which is also by the same process pushed downward involving in the compression the anterior segment of the tympanic bone so that it can develop unrestrictedly in neither direction, anterior and upward or posterior and upward, but must follow the line of least

resistance and curl from either extremity inward on its axis. This narrowing of the space of the normal development of the tympanic bone is also further increased by the direct transmission of pressure from the orbito-frontal plate through the greater wing of the sphenoid and thence to the squamo-temporal anteriorly, pressure being thus propelled directly against the anterior segment of the temporal bone.

These processes are further increased by the fact of the squamosal ossifying at the earliest stage—just after birth—in the directions upward, outward and forward, and therefore encroaching in those directions from which pressure is already being made in the very impressionable skull, and also ossifying outward involving at once its tympanic division which at the time of birth has become attached to it at its two terminals, anterior and posterior.

The interesting observation as to the effect of the compression on the internal auditory meatus located immediately above the jugular foramen was rendered impossible owing to the presence *in situ* of the calvaria.

1. Ancon, Peru. Brachycephalie, not extreme; auditory canals normal.
2. Peru. Brachycephalie, extreme; auditory canals normal.
3. Brachycephalie, not marked; auditory canals normal.
4. Brachycephalie, not marked; auditory canals normal.
5. South Sani. Brachycephalie, not marked; auditory canals normal.
6. Brachycephalie, not marked; auditory canals normal.
7. Ancon, Peru. Brachycephalie, not marked; auditory canals normal.
8. Brachycephalie, parietals not prominent; auditory canals normal.
- 9, 10 11. Children's skulls, not deformed; auditory canals normal.
12. Ancon, Peru. Brachycephalie, short basilar index. Exostoses in each auditory canal, but larger in one than in other, making auditory canals into an S-like slit.
13. Ancon, Peru. Flat frontal, but occiput normal, and auditory canals large, round and funnel-shaped.
14. Ancon, Peru. Slightly brachycephalie, no exostoses but auditory canals narrowed symmetrically in antero-posterior direction and the long diameter nearer perpendicular than normal.
15. Ancon, Peru. Brachycephalie; auditory canals clear but antero-posterior diameter shortened, not extremity.
16. (Male) markedly brachycephalie; auditory canals narrowed on either side to slit-like orifices, perpendicular diameter.
17. Ancon, Peru. Not brachycephalie; auditory canals normal.
18. Ancon, Peru. Brachycephalie, bones more pervious than in previous brachycephalic skulls examined, and with this condition nasal and facial bones are developed in long supero-inferior axis, giving a long index from anterior margin of foramen magnum to superior alveolar process; mastoid large and much elongated. Auditory canals narrowed antero-posteriorly; long diameter, more nearly perpendicular and lengthened.
19. Ancon, Peru. Not brachycephalie; auditory canals normal.
20. Negro. Not brachycephalie; auditory canals large, round and funnel-shaped.
21. Ancon, Peru. Brachycephalie; auditory canals very small. In the right one the antero-posterior diameter is shortened, but the left one is rounded.
22. European. Not brachycephalie; auditory canals large and oval.
23. Not located. Idiot. Brachycephalie (not artificial), with high frontal and parietals. Auditory canals normal except long diameter nearly horizontal.

24. Ancon, Peru. Not brachycephalic; auditory canal normal with long diameter nearly vertical.

25. Chinook, Columbia River. Child, not deformed; auditory c—* normal.

26. Ancon, Peru. Brachycephalic and asymmetrical; greatest compression over right frontal, so that left frontal and left parietal are higher than right ones. Auditory c— have long diameter nearly vertical with bony hypertrophy extending into canals from posterior margin of tympanic bone.

27. Ancon, Peru. Brachycephalic; auditory c— very small and round; the tympanic bone curled around instead of forming exostotic enlargements.

28. Ancon, Peru. Brachycephalic; auditory c— narrowed by thickening bone antero-posterior and long diameter is vertical.

29. Sierra Gorda, Peru. Dolichocephalic; auditory c— normal but long diameter practically vertical.

30. Ancon, Peru. Slightly brachycephalic; auditory c— normal but long diameter practically vertical.

31. Ancon, Peru. Not brachycephalic; auditory c—; the right has small exostoses, anterior and posterior; the left has large posterior exostosis, and a small one anterior and above.

32. Ancon, Peru. Brachycephalic; auditory c—: right, small, antero-posterior diameter much shortened by general thickening of tympanic bone and long diameter vertical; left, slit-like form, an encroaching enlargement of posterior upper end of tympanic bone.

33. Ancon, Peru (probably). Brachycephalic; auditory c— clear but long diameter approaches a more horizontal position than normal.

34. Comox. Metacephalic; auditory c— normal, very large; long diameter nearly vertical.

35. Brachycephalic, but not apparently artificially compressed; auditory c— small, oval with long diameter vertical.

36. Ancon, Peru. Brachycephalic; auditory c— are coffee-bean shape; left one having depression posterior and right one reversed. Long axis vertical.

37. Ancon, Peru. Brachycephalic, auditory c— narrowed antero-posteriorly, thickening of tympanic bone and long diameter vertical.

38. Not located. Dolichocephalic, auditory c— large and of normal shape.

39. Not located. Metacephalic, but with very flat sloping frontal bone and prominent occiput; auditory c— large and round becoming funnel-shaped as they progress mesiad.

40. North Caledonian. Dolichocephalic, marked prognathism; auditory c— round and funnel-shaped.

41. Ancon, Peru. Brachycephalic; auditory c— normal except that long axis is more nearly vertical than normal.

42. New Guinea. Dolichocephalic; auditory c— large, oval, with long diameter nearly vertical.

43. Not located. Dolichocephalic; auditory c— large and oval, with long diameter upward and forward, downward and backward.

44. Corvitehin Wharf. Antero-posterior compressed apparently artificially and asymmetrically, the compression being from one side anterior with opposite side posterior; auditory c— very small and contracted, longer diameter being horizontal rather than vertical.

45. Not located. Brachycephalic, frontal much flattened; auditory c— very small, almost round, but with slightly longer diameter in a vertical position.

46. South Sanitch. Brachycephalic, flat frontal asymmetrical with high bulging parietals; auditory c— much smaller than normal, the left being smaller than the right, but the form oval, and the long diameter normally placed.

47. "Booboo Mobani." Metacephalic; auditory c— large and almost perfectly round.

48. Ancon, Peru. Metacephalic, no antero-posterior flattening; auditory c— normal.

*c—= canals.

49. Not located. Metacephalic, auditory c— normal.
50. Ancon, Peru: Metacephalic, frontal not flattened, auditory c— normal.
51. Not located. Metacephalic with receding frontal and prominent occiput (cannot determine whether or not artificially flattened); auditory c— normal.
52. Ancon, Peru. Brachycephalic, flattened frontal and prominent parietals; auditory c— abnormally small and long diameter vertical.
53. Scuth Sanitch. Metacephalic; auditory c— small and coffee-bean shaped, longer diameter forward and upward, downward and backward.
54. Ancon, Peru. Metacephalic; auditory c— small, long diameter vertical; left canal bony projection in lower posterior quadrant, and right has bony projection in upper anterior quadrant.
55. Not located. Dolichocephalic; auditory c— small, nearly round, but slightly longer diameter vertical.
56. Negro. Dolichocephalic; auditory c— free from projections, funnel-shaped (growing smaller in diameter, mesiad), but externally having slightly longer diameter upward and forward, downward and backward.
57. Ancon, Peru. Metacephalic; auditory c— large, free, and oval with long diameter almost vertical.
58. "European." Metacephalic; auditory c— medium large, oval, long diameter upward and forward, downward and backward.
59. Hottentot. Dolichocephalic; auditory c— large and very nearly round, but having slightly longer diameter upward and forward, downward and backward.
60. Songish (Indian). Brachycephalic; auditory c—very small but free and oval with long diameter upward and forward, downward and backward.
61. Peruvian. Metacephalic; auditory c— small but normal in shape.
62. "European." Not deformed; auditory c— large, oval, long diameter upward and forward, downward and backward.
63. "European." Metacephalic; auditory c— normal.
64. Ancon, Peru. Metacephalic, auditory c— very small, but otherwise regular in form.
65. Ancon, Peru. Antero-posterior artificial compression but asymmetrically, being from right downward to left posteriorly; auditory c— unequal, the right one being larger and oval with long diameter upward and forward, downward and backward, this side having occiput larger, fuller, and lower level of parietal eminence, the left canal is small and nearly round, but no projection, the occiput being very compressed and the parietal eminence high.
66. Ancon, Peru. Brachycephalic; auditory c— have no bony projections but are flattened in general antero-posteriorly, but still have longer diameter extending in direction upward and forward, downward and backward.
67. Laplander. Metacephalic; auditory c—: left very large and appears as if dilated (scooped out), but is oval with long diameter forward and upward, downward and backward; right canal normal.
68. Not located. Dolichocephalic; only one auditory canal present (other broken away) which is contracted antero-posteriorly and has small bony projection on posterior upper outer margin of tympanic bone.
69. Not located. Metacephalic; c— normal.
70. Not located. Dolichocephalic; c— large and normal in form.
71. Not located. Brachycephalic; short antero-posterior diameter but canals normal.
72. Not located. Dolichocephalic; c— large and regular in form.
73. Not located. Metacephalic; auditory c— large; long diameter far forward as it extends upward and forward, downward and backward.
74. Ancon, Peru. Child; c— normal.
75. Not located. Metacephalic; auditory c— normal, except long diameter is nearly vertical.
76. Not located (child). Metacephalic; auditory c— large and free from excrescences. Auditory canal, each side dehiscant posterior at inner margin of glenoid fossa, anterior to fossa of bulbus jugularis and external to carotid canal.

77. Not located. Brachycephalie. Antero-posterior compression asymmetrical being more marked on left frontal with right occiput. Auditory e—: nothing remains of either but slits, owing to large bony projections from posterior upper edge of tympanic bones which curl into e— giving each a nearly semicircular form.

78. European. Metacephalie, frontal bone not compressed; auditory e— free, large and oval, long diameter upward and forward, downward and backward.

79. South Sanitch. Brachycephalie, left frontal more compressed than right and high left parietal with compressed right parietal; auditory e— small and nearly round, but slightly longer diameter almost transverse.

80. American. Brachycephalie; auditory e—, free and as usually found except longer diameter is slightly more vertical.

81. Papuan. Metacephalie; auditory e— normal.

82. South Sanitch. Brachycephalie; antero-posterior compression asymmetrical being greater from left frontal with right occiput; auditory e— small and nearly round with slightly longer diameter vertical.

83. Bushman. Dolichocephalie; auditory e— larger than normal and more nearly round.

84. Ancon, Peru. Child. Metacephalie; auditory e— normal.

85. Aneon, Peru. Metacephalie; auditory e—: left has small exerescence at antero-upper margin of tympanic bone and a larger one at posterior upper margin of tympanic bone. Right canal is regular in form but narrower antero-posteriorly than normal.

86. South Sanitch. Brachycephalie; auditory e— regular but smaller than normal.

87. Not located. Brachycephalie; auditory e— are narrow slits caused by curling up of tympanic bones but only small bony exerescences in the meatus anterior and posterior.

88. Kwakiutl. Dolichocephalie; auditory e— small, oval with antero-posterior diameter shortened and long diameter nearly vertical.

89. Aneon, Peru. Brachycephalie; auditory e— small, contracted antero-posteriorly and right has large bony exerescence at upper posterior edge of tympanic bone.

90. Ancon, Peru. Metacephalie; auditory e— small but regular in form.

91. South Sanitch. Brachycephalie; auditory e— antero-posteriorly narrower than normal but regular in form.

92. Chaney, Peru. Metacephalie; auditory e— smaller than normal, the long diameter being nearly vertical; the meatal walls are smooth and regular but diameter is made smaller by thickening upward and inward of the anterior edge of tympanic bone.

93. Chaney, Peru. Brachycephalie; auditory e— small with slight thickening of the anterior edge of tympanic bone which, had the subject become older, would in all probability have developed into a bony exerescence.

94. Not located. Brachycephalie; auditory e— round and funnel-shaped.

95. Chaney, Peru. Brachycephalie; auditory e— small but regular.

96. Not located. Metacephalie; auditory e— small but regular.

97. Not located. Brachycephalie; auditory e—: right one narrow and slit-like with long diameter nearly vertical and a small exerescence at the posterior upper margin of tympanic bone and a pronounced general thickening of the anterior upper margin of the bone. Left canal entirely closed with exostotic growths, the posterior larger and curled over anteriorly into the lower part of the canal and above it and curling posteriorly, the thinner curled hypertrophic growth of the anterior margin of the tympanic bone.

98. Not located. Metacephalie, showing evidence of artificial deformation. Auditory e—; left narrowed to an irregular slit, with axis vertical. This closure is caused by a regular thickening and the formation posteriorly of two unequally thickened plaques. Right canal is altered only in having the long diameter nearly vertical. (On the left side this skull has a paramastoid process and shows slight dehiscence of bone posterior to and mesiad from the temporo-maxillary articulation.)

99. Mound builder. Metaephealic, not artificially deformed, bones slight in texture; auditory c— large, round, externally and contracting mesiad to become funnel-shaped.

100. Ancon, Peru. Brachycephalic; auditory c— regular in form but very small, the tympanic bone being consistently thickened.

NOTE.—Parenthetical numbers refer to case and individual specimens in the Field Museum of Natural History. c—canal.

SKULLS FROM CULIN, VANCOUVER ISLAND

1. Dolichocephalic; artificial; coronal suture bandaging; tympanic bones thin; right meatus larger than left; right meatus long diameter perpendicular; left meatus long diameter slightly upward and forward, downward and backward. C— larger than in European skulls.

2. Kwakiutl (40785), British Columbia. Dolichocephalic; frontal pressure; bones are small and slight; tympanic bones thin and do not extend up well posteriorly on to the mastoid portion. C— small but regular with long diameters extending slightly in direction upward and forward.

3. Salmon River (40799). Five-year-old child. Dolichocephalic but apparently not artificial. Tympanic bones the same as in (40785) as to thinness and position. C— large, oval and long axis upward and forward. Glenoid fossæ both very large, broad antero-posteriorly and dehiscence of the tympanic bones leading from the external auditory canal into the inner and posterior part of the articular area. Glaserian fissure very marked on both sides.

4. Stone Graves, etc., British Columbia (40772). Very thick diploetic type of bones. Dolichocephalic; flattened frontal. Tympanic bones thick but short in upward direction on posterior aspect. Right meatus oval with long diameter perpendicular. Left meatus round.

5. Krooste head (41519) (182). Heavy thick bones; massive face. Dolichocephalic but not markedly and not artificially deformed; exceedingly long styloid bones and heavy; tympanic bones thick and heavy with large vaginal processes. C— large and oval, slightly antero-posteriorly shortened on right side and long diameter nearly perpendicular; on left side more rounded with normally placed long diameter.

6. Same drawer (182), second head toward rear of drawer. (Has loose ossicula in left ear). Same as above but more round headed and shows large bone wound in frontal mid-line immediately above frontal sinus. Otherwise same as above. Auditory c— have long diameter more upward and anterior.

7. North Island (F.) (41512) (174). Not deformed. Dolichocephalic. Bones thin and slight; styloids very long and strongly inclined forward, more than usual. Tympanic bones both dehiscence into glenoid fossæ. Tympanic bones very thin and slight and c— large with long diameter normal.

8. North Island (41529) (166). Female. Same general character as above. Inclination of styloids forward. Tympanic bones not dehiscence and not large. C— large with long diameter normal.

9. North Island (41514) (173). Female. Beautiful specimen. Bones much more massive than the above; not deformed; dolichocephalic; no dehiscence tympanics. Tympanic bones very thick and heavy. C— normal but not as large as in above, owing to thick tympanic bones.

10. (41528) (165). Female. Bones heavy; head same as in (41514); tympanic bones thick and heavy; C— smaller than in the first of this set, but regular and normal in shape. Styloids strongly inclined forward but broken. (Left side posterior to digastric fossa long thick exostosis posterior to jugular bulb. Paramastoid?.)

11. North Island (41518) (157). Male. Bones heavy and massive. (Had inus in left ear). Very long, strongly anteriorly inclined styloids. Dolichocephalic with rather flat frontal but not deformed. Tympanic bones not as thick and heavy as in one of the previous North Islanders, but have the thickened inferior

elongation down along the styloids. C— large, oval exostoses, and funnel-shaped extending inward. Long diameter normal.

12. Kwakiutl (40672) (1305). Male. Very dolichocephalic, binding around posterior to coronal suture. Supra-occipital very elongated frominion to foramen magnum. Mastoid process at base is elongated and thickened antero-posteriorly. Zygoma very long and arch is flattened transversely.

13. Kwakiutl. North Vancouver Island (40521) (1307). Female. Dolichocephalic. Apparently not bound but flat frontal. Squamo-temporal is long antero-posteriorly. Auditory c— comparatively large and nearly round, the tympanic bones being comparatively thick and massive, and the skull small but comparatively massive.

14. Kwakiutl (May's Place, No. 28) (40528) (1304). Dolichocephalic, artificial, circular bandaging. Base of mastoid very broad antero-posteriorly, squamo-temporal elongated from squamo-zygomatic juncture and linea temporalis has strong inclination upward and backward toward occiput. Bones not very massive. Tympanics rather slight and thin, and c— large, oval, with long diameter normal, but slightly shorter antero-posteriorly than normal.

15. Kwakiutl (Cape Commerall) (No. 66) (40507) (1318). Strongly dolichocephalic; bandaging around posterior frontal and posterior to coronal suture and infra-occipital. Bones comparatively massive but tympanics thin and slight. C— small but regular except slightly shorter in antero-posterior direction than normal, and long axis perpendicular. Linea temporalis strongly inclined upward toward posterior parietal eminence position, and base of mastoid immensely elongated and at juncture with sagittal suture a strong formation like accessory suture bones. The sagittal suture continuing down mesiad to the digastric fossa separating the mastoid from the supra- and basi-occipital, very open and free showing that it must have been kept open for the development of this part of the skull as the other parts are more repressed (compensatory). (May see here the natural arrangement for skull growth.)

16. Kwakiutl (40510) (1303). Male. Dolichocephalic and has been circular bandaging but not very successfully. Shown mostly by elongation posteriorly of supra-occipital. Bones rather slight. Tympanics thin and c— as usual with long diameter upward and forward, downward and backward. Base mastoid slightly elongated but same complex bony arrangement at juncture with sagittal suture which suture is almost obliterated.

17. Kwakiutl, May's Place (40528) (1304). Male. Dolichocephalic but not strongly, has been bandaged as usual. Bones slight. Tympanics thin and c— large, oval, with axis normal. Mastoid bones are the same as in (40510).

18. Kwakiutl, North Cape Scott (40526) (1310). Female. Bones heavy for female. Dolichocephalic but apparently never bandaged. Linea temporalis almost entirely horizontal in position but base of mastoid very wide antero-posteriorly. Tympanics thick and heavy with long heavy vaginal processes extending over on the styloids. Squamo-temporal-zygomatic very long antero-posteriorly and same formation bone at mastoid juncture with sagittal suture as before. Auditory c— small but regular.

19. Kwakiutl (40786) (1309). Female. Very dolichocephalic. Bones very slight. Bandaging circular around supra-occipital and posterior to coronal suture, scarcely any over frontal, and squamo-temporal bone has been mostly excluded, but posterior part of the base of the mastoid is very elongated and complex at juncture with sagittal suture. Linea temporalis is normal and that line seems to extend strongly upward only where bandaging has included the squamo-temporal. Tympanics comparatively thick and strong vaginal processes on styloids. Right meatus is large and round. Left meatus not so large but oval and long axis is perpendicular. Supra-occipital is immensely elongated. A peculiar feature of this skull is that the elongation is so abrupt and constriction around is so acute that at squamo-temporal articulation with frontal and parietals these two bones on each

side recede suddenly from the articulation, making the articulation a very prominent irregular ridge which is not quite so marked on right as on left because in frontal view the frontal is irregular (asymmetrical), the left antero-temporal region being more bulging outward than the right which gives a shorter perspective in this view than on the right side, but again there is a slightly greater depression posterior to this where bandaging has been done, hence compensatory ridge on left anterior. Again there is a decided deviation of posterior part of the vomer running superior to left and inferior to right, at posterior margin the bone being thin as tissue paper and the hard palate being high but comparatively broad.

20. Kwakiutl (Cape Commerall) (40523). Female. Very dolichocephalic. Bones very slight. Bandaging circular around supra-occipital and posterior to coronal suture, scarcely any over frontal and therefore temporal bone has been excluded, but posterior part of the base of the mastoid is very elongated and complex at juncture with sagittal suture. There has apparently been greater pressure on posterior part of squamo-temporal because it is not quite so elongated perpendicularly. Auditory c— are narrow and slit-like with long axis perpendicular.

21. (40684) (1201). Males. (Following three from tribe Cowichan, Quamichan Village). Salmon River. Very solid, heavy bones. Brachycephalic, from pressure either at upper angle supra-occipital and posterior angles of parietals or that combined with high frontal pressure. Skulls all irregular laterally with irregular high parietal eminences.

22. (40684). Very short supra-occipital from foramen magnum to occipital eminence and strong curve to upper posterior supra-occipital. Tympanics heavy but not broad. Auditory c— both strongly funnel-shaped and oval, but long axis almost horizontal.

23. (40738). Very short supra-occipital from foramen magnum to occipital eminence and strong curve to upper posterior supra-occipital. Tympanics heavy but not broad. Auditory c— not so horizontal as above but small and very flattened in a semi-antero-posterior direction. Linea-temporalis strongly turned up toward the compensatory elevated parietal eminences.

24. (40877). Very short supra-occipital from foramen magnum to occipital eminence and strong curve to upper posterior supra-occipital. Bones not so dense but tympanic bones thicker than the two preceding. Right auditory meatus oval and long axis nearly horizontal; left irregularly round (apparently an old person—some absorption in alveolar process).

25. (Case 18, East Court, So.) Kwakiutl. No number. Artificial dolichocephalic, bandaging around frontal and posterior to coronal, extreme elongation supra-occipital, and parietals come to a single prominence posteriorly. Base mastoid very broad antero-posteriorly and a complex bony arrangement at juncture of sagittal suture. Bones not specially massive. Tympanics comparatively thin. C— small antero-posteriorly and long axis in left is perpendicular; in right, is removed from normal, extending upward and backward, downward and forward.

26. Case 18 (40406 by Lieut. Stafford), Oruro, Bolivia. Not massive, extreme elongation, but very regular from frontal sinus to apex of parietals. Left temporal bone is absent. Right tympanic is very thin and dehiscant in glenoid fossa. C— very large and oval with longer axis inclined upward and backward, downward and forward. (Fine subject to study spheno-ethmoid angle.)

27. Case 18 (40399). Arica, Peru. Extreme elongation from frontal sinus to crown of parietals but latter not so pointed as in (40406). Frontal most compressed and again posterior to coronal suture. Linea-temporalis has strong inclination upward and backward toward juncture of occipital with parietals. Mastoids long antero-posterior base but made mostly by accessory bone on left side in sagittal suture and same on right side. Tympanics thin and slight. C— ovoid with long axis perpendicular.

28. Case 18 (50413) Huaracundo, near Cuzco, Peru. Very young, twenty years or so. (Beautiful head for study of sutures and nasal septum.) Bones slight and thin; elongated not extremely but markedly, with greatest compression

posterior to coronal suture. Supra-occipital very long and has interparietal bone, also each glaserian fissure contains small oval intercalary bone. The tympanics are very slight and thin, left has dehiscence and right is very thin in spots. Auditory c— large, right one larger than left, and more nearly round but still ovoid as is the left. Accessory bone in right glaserian fissure larger than left and long axis of c— perpendicular. Ravinian notch in either ear very broad owing to the fact that the tympanics do not extend up posteriorly on the mastoid except to just form the floor and curve. Linea temporalis strongly inclined upward and posteriorly; mastoid much elongated back towards sagittal suture.

29. (40278). Case 20. Inca, from Huaracundo, Peru. Markedly elongated with lateral depression over frontal and dehiscence posterior to coronal suture. Bones comparatively massive. Mastoid part of temporals seem to have developed immensely to the loss of the posterior part of squamous, the articulation of squamo-temporal and parietal making a straight line leading rapidly downward as it extends posteriorly from a point immediately over (or above) the squamo-zygoma. All the sutures except the sagittal are very straight (not corrugated) and all sutures, except sagittal are ossified almost entirely. Tympanic bones thin but wide supero-inferiorly to fill in wide declivity between zygoma and largely developed mastoid, and tympanics have large vaginal processes and tympanics do not extend up on the anterior wall of the mastoid, except as above, enough to form the floor of the c— and become attached to mastoid. C—large, oval and normal axis.

30. Case 31 (40279). Inca, from Cuzco, Peru. Moderately elongated. Skull thick and bones of mastoid developed back to sagittal suture and very complex at juncture. Tympanics thin and wide but with comparatively large vaginal processes and very long styloid. Dehiscence in right glenoid. Auditory c— large, ovoid, funnel-shaped, with long axis normal. (Malleus and incus in right middle ear, removed.) Right meatus much larger than left and posterior to digastric fossa a long tubercle which has extended down and ends by a square facet which has apparently articulated with the lateral process of the first vertebra (paramastoid?).

31. (40669). Case 23. Kwakiutl. Bones medium but very elongated as other Kwakiutl skulls; extreme frontal and posterior coronal depression. Mastoid very elongated posteriorly and complex articulation with occipital; right has extreme long styloid. Linea temporalis much inclined upward and backward. Tympanics comparatively thick, c— oval, comparatively small and upper anterior edge both sides turned downward into top of c— but no nodular enlargement.

32. (40112). Case 24. Thick heavy bones. Peruvian. Brachycephalic, artificial frontal and occipital pressure with both tympanic bones curled up at postero-inferior edge, and large nodule almost entirely filling c—.

29 E. Madison Street.

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ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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NOVEMBER, 1912

SLANDERING THE MEDICAL PROFESSION

Under date of October 2, 1912, the Secretary of the Illinois State Board of Health sent out from Springfield a statement which has been copied in a number of daily papers in Illinois. The statement was that physicians have been charged with selling free antitoxin which was supplied to them for use in their practice without cost to their patients. As to the truth or falsity of this charge we know nothing, but evidently it is a serious matter to send out any statements of this sort without giving names of those abusing the law and proof of the charges. A number of marked papers have been sent to us, in which the headlines would indicate that this matter had been thoroughly proven. On perusing the article, however, we find that charges have been made, but no names, places or dates given where it had been proven. We challenge Secretary Egan to produce the proof that any member of the State Medical Society has been guilty of such outrageous conduct. If a guilty one should at last be found, we venture the statement that he will be found a graduate of some inferior school permitted to exist by grace of the Illinois State Board of Health. We have received letters strongly resenting the charges made by Dr. Egan insinuating that members of the profession are "petty thieves." The evident purpose in sending out any communication of this character at the present time is a political one, since but twelve lines are devoted to the unproven charge, while seventy-five lines, in one of the papers sent to us, are devoted to laudation of the Board and the present incumbent of the gubernatorial chair.

TYPHOID FEVER

On another page will be found a map prepared by the Director of the State Water Survey, Professor Edward Bartow, of the University of Illinois, which, in a large measure, tells its own story. A peculiarity that attracts attention first, is the fact that six counties in the south of the state, and three counties in the extreme north have a very bad record; also that such intelligent communities as Alexander, Clark, Franklin, St. Clair, Clinton, Marion, Adams, Warren, Knox and Kane counties follow but little behind these six counties in the prevalence of this preventable disease. We have long known, and a number of times called attention to the fact that typhoid fever, the opprobrium of sanitary science, prevails unnecessarily in our state, and we fear that under present conditions there is little hope of improvement. An eradication of the disease could be brought about by a systematic campaign of education among the people. We trust all our readers will use this map for educational purposes among their clients, and that in a few years it will not be possible to show such disgraceful conditions existing in the state of Illinois.

FLEXNER'S ABILITY APPRECIATED IN GERMANY, BUT NOT IN ILLINOIS

A. FLEXNER—MEDICAL EDUCATION IN EUROPE—CARNEGIE FOUNDATION, 1912.

"A remarkable work of 350 pages which is based on a thorough study of the education of doctors in England, France and Germany. The material is not only valuable as a work of reference, but above all comparatively and critically composed. With every acknowledgment which is due to the art of teaching in Germany, the author does not hesitate to lay his finger on the weak spots. Our commissioners of education will do well to pay serious attention to the material here assembled."

Professor Garré, of the surgical chair at Bonn University, thus reviews Flexner's work in the *Deutsche Zeitschrift für Chirurgie* for September, 1912. Our readers no doubt well remember the discourteous language used toward Abram Flexner two years ago by those two learned gentlemen, the President and Secretary of the Illinois State Board of Health. The occasion for their abuse of Flexner was of course because he told the truth concerning the Board of Health and the rotten Chicago medical schools which they uphold.

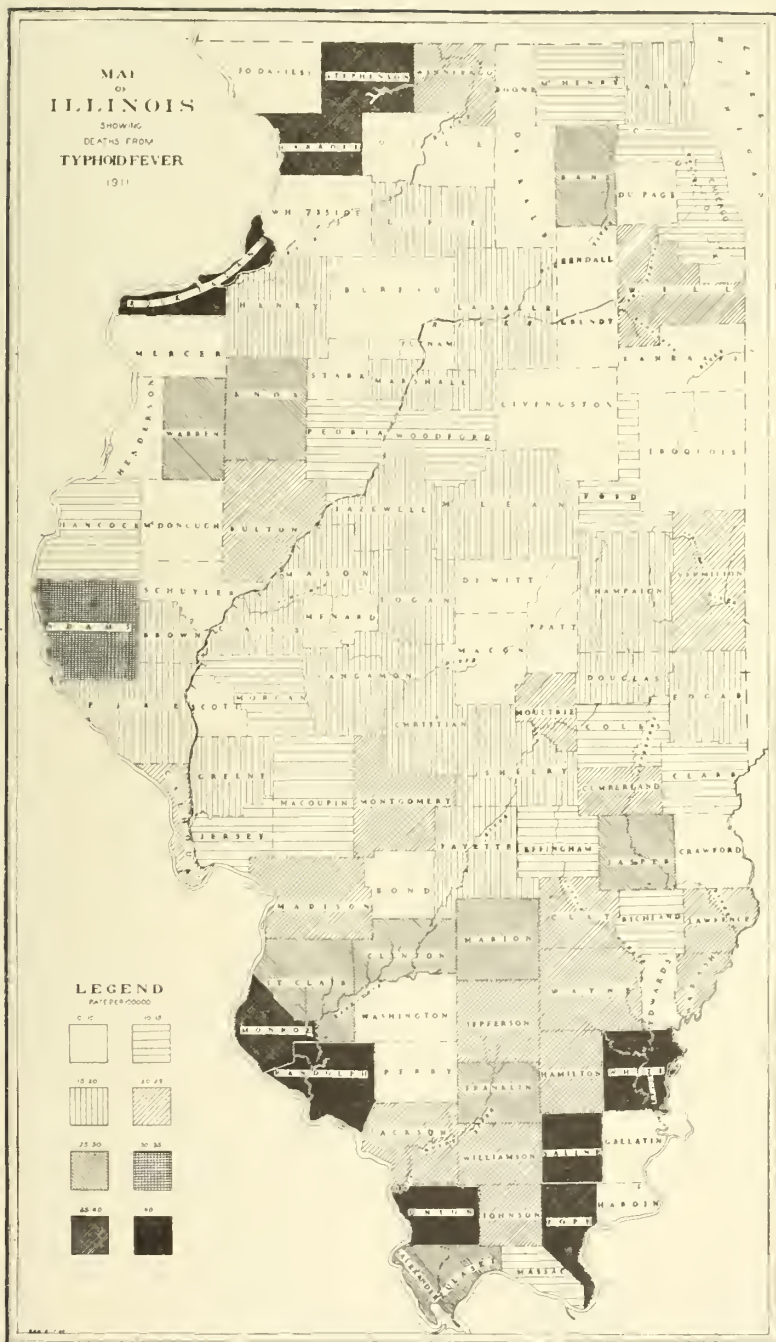
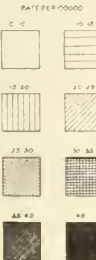
RULES FOR THE MANAGEMENT OF POLIOMYELITIS

PROMULGATED BY THE CALIFORNIA STATE BOARD OF HEALTH

1. Acute poliomyelitis should be regarded as an infectious disease and quarantined accordingly.
2. The period of quarantine shall be thirty days dating from the onset of the disease.

MAP
OF
ILLINOIS
SHOWING
DEATHS FROM
TYPHOID FEVER
(1911)

LEGEND



3. Premises shall be placarded as in other quarantinable diseases.
4. No persons, other than doctor, nurse or clergyman, who shall come in contact with the sick, shall enter or leave the premises.
5. Contacts and suspects shall be kept under observation for twenty-one days.
6. Cases must be reported to the local sanitary authority and by it to the State Board of Health. Every effort should be made to trace possible means of communication, especially when the disease first occurs in any locality. Use federal blanks obtainable from State Board of Health.
7. The same precautions should be taken in the care and management of poliomyelitis as in the cases of other infectious diseases, of which scarlet fever is suggested as the type.
8. Special attention should be given to discharges from the nose and mouth. These should be caught on material that can be burned or in vessels containing a disinfecting solution. Urine and feces should be sterilized before being placed in closets.
9. Domestic animals should be rigidly excluded from the sick-room and from all infected premises.
10. Before release from quarantine, the patient's and attendant's clothing and premises must be disinfected in accordance with standard methods.
11. In the presence of an epidemic, it is wise to forbid the congregating and assembling in any manner of children under 15 years of age.
12. Where the disease is prevalent, it is a safe precaution, where possible, to keep children strictly confined to their own premises, and in every case to avoid entrance of contacts.

A NEWSPAPER OPINION OF ETHICAL PROPRIETARIES AND THEIR USERS

Appreciating that proprietary nostrums, to a very large extent, owe their continued existence to the recognition given them by certain medical journals, and that these publications in turn owe their existence to the support given them by physicians, the Missouri State Medical Association at its last annual meeting adopted a resolution pronouncing it derogatory to the best interests of members to publish articles in medical journals whose advertising pages contain fraudulent or questionable advertisements. Naturally this action has not been praised by those medical journals which, to a very large extent, are dependent on nostrum advertisements for their existence—the so-called “independent journals.” On the other hand, Missouri's action has been endorsed by a lay publication, the *New York Sun*, which said, editorially, in part:

“The absence of cooperation among physicians in the promotion of their interests is a matter of frequent observation. It is therefore gratifying to record an instance exemplifying the recognition of a danger menacing both the public and the profession, and the action taken by at least one organization to meet it.

"The State Medical Association of Missouri has adopted a resolution which pronounces it 'derogatory to the best interests of members to publish articles in medical journals whose advertising pages contain fraudulent or questionable advertisements.' The lay reader cannot realize the importance of this enactment, not for the doctor alone, but also for the interests of the public, which is the unsuspecting victim and the greatest sufferer from the abuses this resolution is aimed to correct. the prescription of secret nostrums and other proprietary drugs by physicians."

In commenting on this indication of public interest, the *Journal A. M. A.* (Oct. 5, 1912, p. 1307) suggests that, in view of the present wide-spread interest of the layman in all things medical, it is not surprising that the "proprietary" evil is beginning to be recognized as something entirely distinctive from the "patent medicine" curse.

OSTEOPATHS STILL OOZING

The Journal of the Medical Society of New Jersey, for October, copies our September caption and comments on the Osteopathic Research Institute which the Stillites have in mind, and makes the following remarks: "The Rockefeller Institute had better look for its laurels when this new research institution gets to work. But we note that the prime object of the osteopathic institution is 'to verify osteopathic theories'; so after all it will not seriously conflict or come in competition with the work of the Rockefeller Institute, which is seeking to know and to establish scientific truth and not to verify theories that may be far from the truth.

"But why should this new Chicago Institute 'seek for the cause of disease'? We thought that osteopaths claimed to know the cause—the one cause of disease—and knowing that, claim the ability to treat all diseases—including diphtheria, gonorrhea and syphilis—without the use of drugs, and appendicitis, gall-bladder disease and cancer without the use of the knife.

"We are led to question the statement of the preacher, in Ecclesiastes 1:9, that "there is no new thing under the sun"; but then we remember that that statement was not made in the twentieth century; if it had been, there would doubtless have been added except osteopathy, Christian Science, and recent styles of women's dress and headgear."

Correspondence

THE GOVERNOR AND THE STATE BOARD OF HEALTH

JACKSONVILLE, ILL., Oct. 22, 1912.

To the Editor:—In reply to your letter making inquiry regarding the efforts which the Council of the Illinois State Medical Society and others have made to secure the appointment of a representative Board of Health,

I will say that I am only too glad to give all the information possible regarding this very unpleasant subject.

While I would be the last man to use the state society as a political organization, I believe that in a matter so important as the State Health Department, which also is charged with the regulation of the practice of medicine, it is the duty of every right minded physician to make himself plain.

Every citizen should know that the condition of medical education in Illinois has been, and is, a disgrace. He should know that Indiana, Ohio, Missouri and other states have not only severely criticised Illinois, but some have positively refused reciprocity with this state on account of the low standard of our medical schools.

Every citizen should know that the only way in which the standards can be raised is by the earnest and conscientious action of the State Board of Health.

Every citizen should know that the Governor has allowed the term of office of all the members of the State Board, except one, to expire, and that he has failed to make new appointments, although he has repeatedly promised to do so.

Every citizen should recognize the fact that the only way to improve these conditions is to get the Governor to appoint a representative and progressive State Board of Health.

Every doctor should ask himself what he is going to do about this matter. Shall he remain silent in view of the galling criticism which has been heaped on this state; or shall the members of the profession rise up to a man and demand of the Governor a board which will no longer disgrace our state by its inefficiency?

Every good citizen should understand that the present conditions are due to the deliberate negligence of the present Governor. If he has sufficient confidence in the present Board to retain them in office, he should show that confidence by reappointing them; but if they are not desirable for reappointment, he should reorganize the Board as he has so frequently promised to do.

Very truly,

CARL E. BLACK.

SECRETARIES, PROGRAM COMMITTEES AND MEMBERS OF THE ILLINOIS STATE MEDICAL SOCIETY

At the meeting of the Committee on Public Policy, held recently, the Secretary was instructed to bring to your attention the adoption of the following resolution by the last House of Delegates:

Resolved, That the Committee on Public Policy and the Secretary be a special committee to arrange a list of speakers on public health and social hygiene, and that so far as possible this subject be discussed by a member of the profession in every city, village and school house of the state, and that the county societies be interested so far as possible in this work.

The committee desires to know just what arrangements must be made in every county of the state to carry out the provisions of the above resolu-

tion. Will you, therefore, discuss this matter at your meetings, formulate about what you want, and communicate the same to me? The supply of speakers on the above-mentioned subjects is very limited, and it is the opinion of the committee that some member of the profession in your county may be able to do this work satisfactorily.

The committee further desires to state that this work should be classified as follows: viz., speakers addressing county medical societies and social clubs jointly, those that should address school children of proper ages of boys and girls respectively, and those that should address teachers.

Give this your earliest attention and send your instructions and wishes to me.

E. W. WEIS, M.D., Secretary.

SULPHUR SPRINGS SANITARIUM FINANCIALLY SOUND

PEORIA, ILL., Oct. 12, 1912.

To the Editor:—I note in the October issue of the ILLINOIS MEDICAL JOURNAL, among the news items, mention of the fact that a receiver was asked for the Sulphur Springs Sanitarium, of which I am superintendent. I wish you would kindly give me sufficient space to state the facts in the case.

The instigator of the trouble is a discharged employee, who has since acquired one thousand dollars worth of stock. He induced another stockholder, owning a like amount, to join him in an effort to force us to purchase the stock. His plans failing, he trumped up some erroneous charges in an endeavor to force the issue. However, I have a controlling interest, and I was not born yesterday. When forty-seven thousand dollars out of forty-nine thousand issued stock is perfectly satisfied and the business growing daily, there is not much call for a receiver or anything else disagreeable. The proceeding is merely a puerile attempt at blackmail. Thanking you in advance for this mention, I am,

Yours fraternally,

E. W. OLIVER.

Scientific Editorial

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1912, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

Neosalvarsan is a mixture of sodium 3-diamino-4-dihydroxy-1-arsenobenzene-methanal-sulphoxylate, $\text{NH}_2\text{OH} \cdot \text{C}_6\text{H}_3\text{As} : \text{As} \cdot \text{C}_6\text{H}_3\text{OH} \cdot \text{NH}(\text{CH}_2\text{O})\text{OSNa}$, with inert inorganic salts. The arsenic content of three parts of neosalvarsan is approximately equal to two parts of salvarsan. Neosalvarsan is supplied in sealed tubes containing, respec-

tively, 0.15 gm. (2 3-10 grains), 0.3 gm. (4 6-10 grains), 0.45 gm. (6 9-10 grains), 0.60 gm. (9 3-10 grains), 0.75 gm. (11 6-10 grains), 0.9 gm. (13 9-10 grains). It is readily soluble in water-forming solutions, which are neutral to litmus and very unstable. The action and uses are the same as those of salvarsan. The average single dose for man is 0.75 gm. (12 grains). It may be administered by intramuscular or, preferably, by intravenous injection. For intravenous injection 25 c.c. freshly distilled water for each 0.15 gm. is to be used. For intramuscular injection 3 c.c. of water should be used for each 0.15 gm. neosalvarsan, this yielding an approximately isotonic solution. Victor Koechl & Co., New York (*Jour. A. M. A.*, Sept. 14, 1912, p. 879).

Saloquinine, the salicylic ester of quinine, is described in New and Nonofficial Remedies, 1912. The product as sold by Merck & Co., New York, has also been admitted to N. N. R. (*Jour. A. M. A.*, Sept. 14, 1912, p. 879).

Articles accepted for N. N. R. Appendix:

Menthol-Iodol is a mixture of iodol 99 parts and menthol 1 part. Kalle & Co., New York (*Jour. A. M. A.*, Sept. 14, 1912, p. 879).

CHICAGO, Oct. 1, 1912.

To the Editor:—Since September 1, the following articles have been accepted for inclusion with New and Nonofficial Remedies:

Neosalvarsan (Victor Koechl & Co.).

Bismuth Betanaphtholate (Merck & Co.).

Staphylo-Strepto-Bacterin Mixed (H. K. Mulford Co.).

Anti-Plague Bacterin (H. K. Mulford Co.).

Slee's Glycerinated Vaccine Virus (Abbott Alkaloidal Co.).

Detre Differential Diagnostic Test (Cutter Laboratory).

Tuberculin O. T. (Dilution) Von Pirquet's Reaction (Cutter Laboratory).

Diphtheria Antitoxin. (Cutter Laboratory).

Yours truly, W. A. PUCKNER, *Secretary*.

IN THE AGE OF SCIENCE

"Come over and play with my little boy, sonny," called the pleasant-faced new neighbor to the solemn faced urchin on the fence between the two houses.

"Is your little boy ailing from anything?" came the child's earnest question.

"No, indeed, sonny. Why?"

"'Cause I've had my tonsils taken out, an' my adenoids removed, an' my appendix cut out, an' I've been vaccinated, an' serumized for typhoid, an' spinal meningitis, an' had antitoxin injected, an' I do hope I won't have anything done to me this year, so's for a while I can have a bit o' fun!"

COUNTY AND DISTRICT SOCIETIES

CHAMPAIGN COUNTY

Dr. George A. Zeller of the Peoria State Hospital addressed this meeting held in September, at Champaign, on what we who heard him have since considered the sensational subject of pellagra. His description of the manifestations of pellagra made excellent pictures of the disease even without the clear photographs—numbers of which were shown. Dr. Zeller asked if we were aware that our immunity of to-day may be changed to a feeling of alarm to-morrow, and stated that he has reason to believe that a spread of pellagra is imminent.

Pellagra has been recognized since 1735, and the theory of its origin has in every epidemic been ascribed to corn although the reality of this has never been proven. It now invades forty states of the Union, with altogether perhaps 7,000 cases, and has a mortality of 50 per cent. There are many cases in Illinois—250 in the Peoria State Hospital. It is a disease of striking anomalies, yet has sufficient uniformity in its manifestations to establish a disease entity. It may affect people in any walk of life; is not contagious; is associated with insanity, but whether it precedes or follows the mental condition is not known. Late investigations have been along the line of a possible protozoan involvement of the intestinal tract of persons afflicted. At this point Dr. Zeller made a reference to the work that was done a few years ago in Dr. Burrill's laboratory at the University of Illinois, on diseases of the corn plant. A fuller description of this work and also that of Professor Forbes, State Entomologist, on black flies and buffalo gnats as possible carriers of pellagra is here added: "After the peculiar malady affecting several persons in the Bartonville Hospital was recognized as pellagra, the United States Surgeon General sent from Washington a medical man to make examination of the situation and of the disease."

In the discussion following Dr. Zeller's talk, Dr. Davis reported a case of pellagra he had charge of in Champaign a few years ago which showed all the characteristic marks.

Dr. Burrill talked on the efforts at present being made by the alumni of the University of Illinois to buy the stock of the College of Physicians and Surgeons in Chicago, for presentation to the University. A committee, Drs. Burrill, Mason and Lyons, was appointed to prepare a report on this question for the next meeting.

Dr. E. G. Boyd of Ludlow, was elected to membership in the society. Nineteen members were present.

CRAWFORD COUNTY

The regular meeting of the Crawford County Medical Society was held Sept. 12, 1912, in the Carnegie Library, Robinson, Ill., at 2 o'clock.

The meeting was called to order by the president, H. N. Rafferty, and the minutes of the previous meeting were read and adopted. The following members of the society were present: Drs. Martin, Price, T. N. Rafferty, Kirk, Firebaugh, Carlisle, Wilson, Dunham, Davis, Brooks, Mitchell, Henry, H. N. Rafferty, Illyes, and Lowe.

The name of Dr. Geo. F. Smith of West York was proposed for membership upon his request and an application blank was sent to Dr. Smith.

The scientific program was then taken up and Dr. Firebaugh gave a very able lecture on "Wounds," dealing especially with wounds of the head and face, also demonstrating a wound of the scalp upon a patient. Upon motion seconded and carried the paper was received by the society for discussion which was led by Dr. Martin and participated in by the entire society.

This was followed by a paper, "Cholelithiasis with a Report of Case," by Dr. Brooks. The paper was very interesting and instructive, dealing with the subject especially from a surgical standpoint. The case reported was a case of cholelithiasis closely resembling intestinal obstruction and was differentiated by an exploratory incision. This case was one of unusual interest and a brief report will be given. The patient's previous history was negative, mother of six children, aged 39 years. First complained of intense abdominal pain, with slight radiation to right shoulder, gall-stone colic was suspected and usual treatment instituted. Case went on for two days with slight change with no stools and some vomiting with a possible fecal odor.

She was prepared for operation on the third day and just previous to starting the anesthetic she again vomited with a decided fecal odor. The operation was performed, the gall-bladder was found necrosed, adhesions formed and a large gall-stone removed. The patient made a good recovery from the anesthetic, bowels moved four times during the next eight or ten hours, but patient died about ten or twelve hours after the operation probably from shock.

The paper, upon motion seconded and carried, was received by the society for discussion. This was led by Dr. Henry and a free discussion by the society followed.

A case of iritis was then demonstrated and discussed by Dr. Firebaugh. Adjourned.

A. LYMAN LOWE, Secretary.

FOX RIVER VALLEY MEDICAL ASSOCIATION

The ninety-fourth semi-annual meeting of the Fox River Valley Medical Association was called to order by President Schurmeier, May 14, 1912, at 10:30 a. m. with forty-six members present. The minutes of the previous meeting, held in Geneva February, 1912, were read and so adopted. Dr. McDonald moved, seconded by Dr. Mann, that the courtesies of the society be extended to Drs. Lord of Plano and Howell of Elgin. Carried. Report of standing committees none. Report of special committee as follows:

To the Officers and Members of the Fox River Valley Medical Association:

Gentlemen.—Your committee appointed to investigate the matter of issuing a bulletin in the name of the association have to report that such a publication can be issued as a four-page folder, with 36-point type caption, filled with 8-point type solid matter, all manuscript copy to be submitted to printer typewritten, at a cost of about \$8.75 per hundred copies. This cost might be reduced by the sale of advertising space, but estimate on that point cannot be given. The committee will be willing to assume the responsibility of getting out two or three issues, until such a time as the society makes other plans.

Dr. MacDonald moved, seconded by Dr. Sherman, that the report be accepted, and placed on the files of the association. Carried.

There was considerable discussion as to the feasibility of publishing such a bulletin and whether the money spent in this way could not be used in a more profitable way for the society. A rising vote was taken with the result that eighteen of those present voted in favor of such a publication as the committee recommended and that the committee be empowered to proceed to issue the bulletin and authorize the secretary to issue an order on the treasurer for the necessary money. There were three dissenting votes.

Dr. MacDonald suggested that Article II of the By-Laws be changed so that the program will alternate, instead of the surgical papers being given in the morning and the medical in the afternoon as heretofore. It is hoped by such a change that a fuller attendance will be had during the entire session, as it is now those interested surgically will remain only for the forenoon session and those medically for the afternoon program. The matter was placed in the hands of the following committee, to report at our next meeting in November. Committee: Dr. MacDonald, Aurora; Dr. Bishop, St. Charles; Dr. Schneider, Elgin.

Dr. Scott of Oak Park being unable to attend, Dr. Brennecke opened the program by a paper on "Intestinal Obstruction with Meckel's Diverticulum."

INTESTINAL OBSTRUCTION WITH MECKEL'S DIVERTICULUM

H. A. BRENNECKE, M.D.

AURORA, ILL.

Because of its importance as a cause of abdominal trouble, it is worth while to review our knowledge of it.

First reported by Rush in 1701, but John Frederick Meckel first called general attention to its presence, etc.

Origin: A persistence of the omphalo-mesenteric duct (yolk stock) in form varying from a patent tube at the umbilicus to a blind tube hanging free in the abdomen or attached by a fibrous band (terminal ligament) to the umbilicus, mesentery or other abdominal organs. In location anywhere in the intestinal tract from the pylorus to the ileocecal valve but usually in the lower one-fourth of the ileum, this depending on the subsequent retardation in the development of one or the other of the limbs of the umbilical flexure. On the intestinal loop the position is generally opposite the mesenteric attachment but may be on the same side or even arise between the layers of the mesentery. Its frequency is said to be about 2 per cent.

As a cause of intestinal obstruction Leichtenstern found in a series of 1,134 cases of obstruction that 6 per cent. were caused by Meckel's diverticulum, also Duchanssoy and Brinton in 991 cases found it a cause in about 6 per cent.

MECHANISM

1. Obstruction from kinking due to traction by an attached diverticulum.
2. May cause a volvulus of small intestines by twisting bowel on its long axis at front of origin of the diverticulum.
3. Chronic inflammation of the diverticulum and adjacent parts may cause a cicatricial narrowing of the bowel lumen.
4. An inversion into the bowel causing a mechanical obstruction or being drawn further into the lumen and causing an intussusception.
5. An attached diverticulum may act as a band around which the bowel becomes twisted.
6. A prolapse of small intestine through an umbilical fecal fistula or a prolapse of a Meckel's diverticulum into a hernia sac.

Symptoms may be summarized as follows: Acute colicky pains, usually in neighborhood of umbilicus, followed by vomiting. Often blood is passed in the stools. If intussusception, you may feel the sausage-shaped mass. Peristaltic waves are often noted. In the beginning fever is not present and the patient may be in good condition for a number of days in spite of severe onset. Mortality very high. A. E. Halstead in fifty-seven cases with obstruction which were operated on had a mortality of 59.1 per cent. H. Tyrell Gray in a table of forty cases, a mortality of 60 per cent. High mortality is due partly to late operation, the condition not being recognized, and because the pathology produced by Meckel's diverticulum is very extensive. The following cases were reported in the original paper:

Case 1.—Miss L., aged 28 years. History as follows: Usual diseases of childhood. For many months has had crampy pains in abdomen. For past six months complained of much pain in left side of abdomen; never passed any blood in stools. Physical examination shows patient in fair condition, somewhat anemic, but heart, lungs and kidneys negative. Umbilicus much retracted. On opening abdomen we found the sigmoid drawn over into the right side of the pelvis. The cecum was high up under the liver and in looking for the appendix found a Meckel's diverticulum about eight inches above the ileocecal valve. This was filled with gas and fecal matter and was constricted at the bowel end so much as to act as a valve. The diverticulum removed, the bowel opening closed by two rows of sutures; appendix normal but removed. Uneventful recovery.

Case 2.—F. D., male, aged 6 years. Previous health good. The day before I was called he had severe abdominal cramps which were laid to eating green apples. Pain continued through the night and the following morning I was called. No history of previous attacks; pulse 146 to 150, weak and thready; temperature normal. Heart and lungs normal. Abdomen: In region of bladder and resembling a distended bladder was a large swelling, dull on percussion and moderately tender. A diagnosis of volvulus made and operation advised but postponed until following day because of absence of father. At the time of operation the patient's condition was very bad. On opening abdomen found a volvulus involving two or three inches of the cecum and about thirty inches of small intestine and at lower end of volvulus was a Meckel's diverticulum about six inches long. Volvulus was resected, the colon closed and a lateral anastomosis by the suture method done. Patient died in twelve hours.

Case 3.—L., male, aged 5 years. History of having had similar attack before in which he passed blood. Present attack began with severe pain in abdomen lasting several hours. Following day had another attack of abdominal pain after which bowels did not move. On the third day he had fecal vomiting. A diagnosis of intussusception was made and operation revealed a mass high up in the right upper quadrant of abdomen which proved to be a Meckel's diverticulum which had become invaginated and then caused an intussusception of about five inches of small gut. This was resected and an end-to-end anastomosis with a Murphy button was made. Patient passed button on fifth day, and left hospital on eleventh day.

Case 4.—Baby E., male, aged 9 months. Doctor called because of severe abdominal pain and passage of bloody mucus. Examination revealed peristaltic waves and a sausage-shaped tumor mass in left side. At time of operation patient was in bad condition. Incision revealed an intussusception of about three inches of the ileum and twenty inches of colon. This could not be reduced, so excision and an end-to-end anastomosis performed. Examination of specimen revealed in the intussusception an appendix three inches long and near it a cupping of intestinal wall which was taken to be a very blunt diverticulum. Died soon afterward.

A review of these cases reveals the fact that each one is different. Case 1 simulated an appendix both in symptomatology and also at operation. Case 2, the diverticulum caused a volvulus. Case 3, the diverticulum had been invaginated and then caused an intussusception of small intestine. Case 4 is similar to Case 3 except that we have an involvement of the large bowel.

DISCUSSION

Dr. Peltin, Elgin: I have not had the experience along this line that Dr. Brenneke has had. I reported a case in the paper I read at the last meeting in which I made a plea for larger incisions. That patient made a nice recovery. I wish to congratulate the writer upon this very valuable and interesting paper.

ECLAMPSIA, DIAGNOSIS AND TREATMENT

M. E. MARION, M.D.

BIG ROCK, ILL.

Eclampsia, or toxemia of pregnancy, is an acute disease occurring in the pregnant or puerperal woman. The condition being dependent primarily on the development of a fetus. It manifests itself by clonic and tonic convulsions with loss of consciousness followed by more or less prolonged coma and renal symptoms.

Before taking up the diagnosis and treatment of eclampsia, I would like to mention the three theories as to its etiology.

1. That it is a general toxemia due to increased metabolism and a decreased elimination caused by the presence and demands of the fetus on the maternal organism.

2. The placental theory of Schmorl, who discovered a cellular element in the pulmonary circulation and maintains that by mechanical means not known, syncytial cells enter maternal circulation and that in their albumin a toxin is contained which is inimical to the mother and which the circulation endeavors to combat by an antitoxin.

3. The Italian theory that the condition is due to an abnormality of the glands of internal secretion, especially the thyroid.

Diagnosis.—Since the occurrence of eclampsia convulsions depends on the susceptibility of the nervous system, an examination of the urine alone is not sufficient to warrant a diagnosis of toxemia. The state of the nervous system should be examined. We may find exaggerated reflexes, neuralgic pains, pernicious vomiting, epigastric crisis, disturbance of vision, etc.

The circulatory system is a prominent diagnostic feature. The tension of the pulse is of two kinds: the heavy, firm, constantly high tensioned pulse which is readily recognized, and the more dangerous variety because it is not so often recognized, the rapid pulse whose tension is not at first raised but which develops quickly upon slight disturbances.

High blood-pressure precedes albuminuria and all the signs of an impending attack of eclampsia. The normal blood-pressure in non-pregnant women who show no signs of kidney and cardiac lesions averages about 112 mm.

The normal blood-pressure in normal pregnant women who present no evidence of toxemia is about 118 mm. This holds true for the first seven and one-half months. At this time it rises until two weeks before term when it reaches 124 mm. In the pressure of toxemia, the blood-pressure is greatly increased, in many cases 142 mm. being the lowest. The high pressure recorded in a woman without convulsions was 192 mm. The highest in an eclamptic, was over 320 mm.

Upon the rupture of membranes in labor there is an immediate fall, from 60 to 90 mm. which is only temporary but is attended with great relief in headache and epigastric pain. After the fetus is delivered there is a second fall of from 60 to 90 mm. This fall is only temporary and unless the patient has bled considerably the pressure returns within fifteen to twenty minutes.

Hirst states that a blood-pressure of below 125 mm. can be disregarded, a pressure of from 125 to 150 mm. needs careful watching and moderate eliminative treatment and will in all probability, if it shows a tendency to climb higher, require induction of premature labor.

C. S. Bacon of Chicago calls the pre-eclamptic stage the eclamptogenic toxemia of pregnancy and states that the convulsions are simply a culminating symptom. He gives the other most important symptoms as edema, increased blood-pressure, albumin and casts, diminished urinary excretion and general toxic symptoms. The frequency of this eclamptogenic toxemia is probably ten to twenty times as great as frequency of the convulsions. In the diagnosis of eclampsia it is extremely important to estimate the rate and total amount of elimination of urine during twenty-four hours. While the pregnant woman stores up nitrogen to prepare her for the muscular trial of labor, the fact remains that a persistently low excretion of urea is abnormal.

A large quantity of serum albumin with granular, fatty or blood casts indicates that the kidney epithelia are badly damaged. The presence of albumin and casts with a low percentage of urea in a pregnant woman, therefore, is a danger signal.

Olshausen points out that severe epigastric pain is a frequent precursor of the seizure and a sign to which more attention should be paid.

I believe that we are all familiar with the eclamptic convulsion, its appearance and its diagnosis, so that it will not be necessary to dwell longer on the subject of diagnosis.

Treatment.—The treatment is divided into preventive and curative. Prophylactic treatment consists of putting the patient to bed and restricting the diet, giving milk and water in large quantities. If this does not serve to clear up the symptoms this treatment is followed by a brisk purge of epsom salts daily and

stimulation of the skin by means of a daily hot pack or sweat bath. If under this treatment the symptoms disappear, the albumin becomes less and the urea increases in amount, the outlook may be considered good. On the other hand, if the albumin steadily increases and the urea elimination decreases while the subjective symptoms remain the same, the prognosis becomes ominous and the appearance of sleep and coma or eclampsia can only be avoided by the induction of premature labor.

It is well to mention here the fact that we should all insist on seeing our prospective patient and examining the urine at least every two months during pregnancy and every two weeks previous to the climacterium.

Under curative treatment comes the discussion and the variance of authorities as to the best manner of caring for the convulsions and marked toxemia. Curative treatment may be subdivided into the medical and surgical treatment. Under medical treatment, B. C. Hurst gives a much discussed plan whereby the mortality was reduced to below 10 per cent.

1. Lavage of colon and stomach, castor or croton oil by stomach tube and later, if patient can swallow, epsom salts. Patient is placed in sweat cabinet for thirty minutes every four hours.

2. Hypodermoclysis after first sweat, 1 quart in colon.

3. Venesection; if the blood-pressure is over 180, 16 ounces of blood are withdrawn.

4. Medication. M: xv fl. ext. veratrum by hypodermic injection. Later gr. .01 nitroglycerin every four hours. Chloral per rectum and chloroform by inhalation. Parathyroid extract gr. 0.25 every four hours is of value.

5. Obstetric treatment. Nothing is to be done except puncture the membrane. Any form of accouchment forcée adds to the risks and increases the mortality. After puncture of membranes and active eliminative treatment an easy delivery is the rule in eight hours.

According to Rouvier and Laffont recovery is much more rapid and complete when eclampsia is treated by morphin. Gr. 0.25 is given every three or four hours supplemented by inhalations of chloroform and copious rinsing out of the stomach and intestines.

Stroganoff outlines a treatment consisting of absolute quiet, avoiding all irritations to kidney regions; supporting activity of skin by keeping the patient warm; free use of oxygen and fresh air; maintaining heart by injecting warm normal salt solution and giving milk or tea with chloral either by mouth or per rectum. If pulse is from 112 to 120 he gives digitalis or digalen and bleeds only in pulmonary edema.

Fraenkel however believes that speedy delivery is a prime essential if the physician is capable of performing the necessary operation. This should be done at once. If circumstances do not permit this, then the treatment of Stroganoff should be used.

Surgical treatment. In the majority of cases speedy delivery after onset of disease and labor. Delivery may be in most cases rapidly accomplished by the manual method of dilation. Child should then be delivered by forceps or version. If, however, labor has not set in and the cervical canal is intact it becomes necessary to determine whether it is more advisable to adopt expectant treatment or to attempt to hasten delivery. The consensus of opinion seems to be in favor of a rapid delivery.

Vaginal cesarean section is the ideal operation for rapid evacuation of the uterine contents in the hands of a specialist. The abdominal method gives good results for the infant but has a high maternal mortality.

Rapid delivery does not constitute the only method of treatment, as a certain number of women die after labor.

In the attempt to stimulate the excretion of toxins after delivery, bleeding is excellent to remove a certain amount of toxic material directly from the body along with the free injection of fluids and the use of normal salt. During the past year much has been done regarding decapsulation of the kidneys for the

most drastic cases. It is claimed that this has a powerful diuretic action on the most severe cases.

In summing up the treatment of eclampsia, it is essential to distinguish between cases in the hands of a specialist and those of a general practitioner. We all agree that immediate delivery gives the best chances for both mother and child in eclampsia, but only in the hands of an experienced surgically trained obstetrician.

Vaginal cesarean section is the best method of delivery in the hands of a surgeon. The recognized treatment, therefore, consists in controlling the convulsions by moderate doses of morphin and chloral and the administration of chloroform. Veratrum viride may be given, venesection practiced, but patient not disturbed by any cathartics or sweats. The bag of waters should be ruptured and a colpeurynter inserted. As soon as the cervix is effaced and so dilated an easy delivery may be accomplished under ether anesthesia.

DISCUSSION

Dr. Peterson, Dundee: We all accept what is taught in school. I think if we would use our own judgment a little more often we would get different opinions. I have had a few cases of eclampsia. The very first one was my second case of delivery in practice. That woman died. What I want to say now is this: the urine may be examined and no albumin found or the urine may not be examined and contain a large amount of albumin. Eclampsia is a case of toxemia. Albright in treating 166 cases, 100 of them women and sixty-six children, 98 per cent. of which died, found in post-mortem examinations that all had diseased livers and diseased kidneys. So it is not only the kidneys that are to be considered. They had all been treated with great care. The deliveries were slow. The most important thing was to use eliminants to relieve the toxemia. This was done by elimination through the emunctory organs. They found when they gave eliminants free of chlorids there was marked improvement, because they found that chlorin could not be eliminated by the kidneys. I have treated similar cases where the kidneys could not remove the chlorin. I gave ammonium chlorid and at once they became worse, but as soon as I gave sodium they improved. Instead of giving chlorids give elaterin or anything else which would relieve the toxic condition. Avoid the chlorids. I say this, the most important thing is to examine to see whether the liver and kidneys both are affected. I think it would be right to have a quick delivery only in exceptional cases, because when the liver and kidneys are sick and you empty the uterus at once, there comes a back pressure from the uterus to the liver. In such cases a slow delivery would be the proper thing. One physician found that a patient suffering from this sort of toxemia was saved by the amputation of the breasts. The toxemia might be produced by the breasts, for we know the close relation between the breasts and the uterus.

The circulation which goes from the uterus into the liver is greatly relieved by free elimination by sweating, purgation, and by rest and milk diet. I think many cases would not be lost if this plan were followed out. The main point I consider is to especially examine the liver and the circulation and see where the relief is mostly needed.

Dr. Abbott, Elgin: I have at present a patient who is seven months in pregnancy. A week ago in examining the urine I found trouble. There was over 1 per cent. of albumin. I placed her on a milk diet and much water. I used the phosphate of soda and Hunyadi Janos water. I examined another specimen yesterday and found only the slightest trace of albumin. This patient is a primipara, married rather late in life and I have anticipated trouble from the very first. However, she is free from all symptoms now.

I had one case of eclampsia which resulted fatally for the mother. That was in a young woman of French descent who had acute Bright's disease during her younger days following some febrile disease. She also was a bleeder and at one time I operated for hemorrhoids by the clamp and cautery method. I was

called in soon after and had a great deal of trouble controlling the hemorrhage. She was six months in pregnancy before I knew anything about her case. Upon making an examination of the urine at that time I found it negative. Following along about seven months she was told to bring in a specimen every two weeks, when it was found to contain a large per cent. of albumin. She was placed on milk diet and an eliminant. To make it short I will say that she got better and then grew worse. The specimen was not brought at the time I expected it and then I found the albumin had again increased; there was much edema of the limbs, followed shortly by a toxic frontal headache. This was about 11 o'clock. I put her on eliminative treatment, she got better and at 4 o'clock in the afternoon I was told she was all right and that I need not come. In fifteen minutes after that I was called to come in a hurry. She was in an eclamptic convulsion and was removed to the hospital. She was then eight months along. A forceps delivery was done but there was no stopping of the convulsions. She was put to bed and given the ordinary treatment, such as application of heat, hypodermoclysis and an eliminant (elaterium) given. She lived eighteen hours. During this time the kidneys secreted only about 3 ounces and to all appearances almost solid albumin. This is the only fatal case and shows what a terrific weight was placed on the organs of the mother, supporting two babies each weighing 8 pounds, besides carrying on the functions of her own body. I have found as the texts state, the later the eclampsia comes on the less they are apt to be fatal. I do not know that there is anything new to add.

Dr. Hawley, Chicago: In cases of eclampsia you examine the fundus of the eye and you come to the conclusion, albuminuric retinitis, but bear in mind there are other toxemias producing similar effects. Autointoxication frequently produces the same condition of the fundus as albuminuric retinitis, and of course there are other toxemias producing conditions of the fundus similar to albuminuric retinitis. In albuminuric retinitis we are very much more apt to have hemorrhages.

Dr. Brennecke, Aurora: I would like to ask Dr. Hawley if you get an albuminuric retinitis, or a retinitis of the autointoxication type in a case of pregnancy, how you are going to distinguish.

Dr. Hawley: That is quite difficult unless you are accustomed to recognizing the appearance of the macula in cases of autointoxication, but one who is accustomed to it can hardly make a mistake. I had a patient come to me with this condition; I made the diagnosis that it was not albuminuric retinitis but a very similar condition; at the time, however, I did not have the suspicion that it was autointoxication. After a time the patient left me and went to someone else, but returned again after six months. The only way would be to eliminate as far as you can abdominal toxemias.

Dr. Bell, Elgin: I have met with a number of cases in my practice and have resorted to active catharsis with such agents as produce a large watery stool. I consider elaterium the best hydragogue cathartic. I use normal salt enemata freely, but do not favor morphin or opiates of any kind because of their action on the emunctories. I believe in early interference in all cases. Even early interference will not save them all. In one case, complicated with placenta previa, rapid delivery was done, the patient dying soon after.

Dr. Brennecke: The subject has been exhaustively treated by the writer, but I have noted that these cases seem to run in groups. Early urinalysis is advisable although not always reliable. I have noted instances where the day before delivery the urine was normal and the day following uremic convulsions. The patient developed acute yellow atrophy, blood in urine, liver decreased in size, leucin and tyrosin in urine. The patient recovered. Case number two developed thirty-six hours after delivery.

Another class of cases in which I found albuminuric retinitis, it being the only symptom present. I advised rapid delivery. This the patient refused. She went to full term uneventful, without, however, fully regaining her vision.

SIMPLE GOITER AND ITS TREATMENT

F. E. BAUER, M.D.

DUNDEE, ILL.

In taking for the subject of this paper, simple goiter, I full well realize that at least the majority of you have been consulted regarding the malady more times than the writer, but it seems to me that this class of patients is often neglected, for the simple reason that treatment for immediate relief is not necessary. Many times the patient will speak of a large neck when consulting a physician regarding some other trouble, when it may be unwise to prescribe a special treatment, and the growth is allowed to continue until pressure symptoms ensue. For this reason I have thought to at least review the condition in the hope that it might help us to urge on our patients the importance of early treatment before the dreaded symptoms arise.

Anatomy.—The thyroid gland bears much the resemblance, in structure, to other glandular organs and is classified together with the thymus, suprarenal capsule and spleen under the heading of ductless glands, it having no excretory duct when fully developed. It is situated at the upper part of the trachea and consists of two lateral lobes placed on each side of that tube and connected by a narrow transverse portion, the isthmus. Its anterior surface is covered by the sternohyoid, sternothyroid and omohyoid muscles. Its lateral surfaces are in contact with the sheath of the common carotid artery. It extends as far back as the lower part of the pharynx, and on the left to the esophagus. It varies in weight from one to two ounces, is usually larger in the female and becomes slightly increased during menstruation. The isthmus connects the lower third of the two lateral lobes and usually covers the second and third rings of the trachea, although there may be variations.

The thyroid body is invested by a thin capsule of connective tissue which projects into its substance and imperfectly divides it into lobules of irregular form and size.

When the organ is cut into it is of a brownish-red color and is made up of closed vesicles containing a yellowish glairy fluid and separated from each other by intermediate connective tissue.

The gland is supplied from the internal mammary and from the superior and inferior thyroid arteries. The veins terminate in the left innominate and thyroid veins. The lymphatics are of large size and arise in the substance of the gland and are said to terminate in the internal jugular vein. The nerves are very small. They are derived from the pneumogastric and sympathetic.

I have gone into the anatomy to this extent as it is very important in the proper diagnosis and prognosis of the diseased gland. The physiology of the gland is not definitely known; therefore, I will not take up the many theories but will leave it for your discussion. Simple goiter is a chronic hypertrophy and hyperplasia of a portion or whole of the thyroid gland. It is of obscure origin, involving one or more of the structural tissues, and is subject to various degenerations.

Pathology.—The enlargement may occur in several ways. The true goiter consists in the enlargement of the old and formation of the new gland alveoli, while with these changes there is very frequently associated a greater or less amount of colloid degeneration. When there is now formation of gland tissue the growth has the character of an adenoma. The hyperplasia may occur diffusely so that the whole gland is more or less enlarged, or it may occur in the form of circumscribed nodules when the colloid degeneration is prominent so that the tumor has a gelatinous appearance which is colloid struma. Accumulation of fluid, blood or colloid in the old or new formed alveoli may lead to dilatation and atrophy of the walls of the alveoli so that cysts, sometimes of large size, are formed and in this way the cystic struma occur.

The blood-vessels may undergo marked dilatation so that we may have the formation of a cavernous angioma within the goiter. Frequently all these

varieties of lesions are present in the same goiter. The growth of the tumor may be very rapid and sometimes becomes very large, encroaching on neighboring parts, before symptoms occur. Death may result by pressure on the trachea, esophagus or large vessels. As to the etiology there is great variation of opinion. Some authors think locality and drinking water are contributing causes, it even being claimed by some that one having a goiter, on moving to a non-goiterous region, may have the growth arrested, but this is also disputed.

Symptomatology.—The thyroid is readily recognized and felt though the patient may complain of nothing but the disfigurement, excepting when the tumor is of sufficient size to cause symptoms of compression. The goiter develops very gradually and may vary in dimensions from the merest perceptible enlargement to a growth that overhangs the chest and greatly hinders the movement of the head. It may or may not be uniform in its development, and is often more enlarged on the right side than on the left. It is not infrequently observed to increase in size with each succeeding pregnancy, and during or after each menstrual period.

The tumor is painless, is not adherent to the overlying skin or to any of the neighboring bones, and rises and falls during the act of swallowing, moving with the larynx. The veins covering it are swollen and prominent. It interferes with respiration, causing dyspnea. Alteration and loss of voice may also ensue. Displacement and distortion of the trachea, the vessels and other cervical tissue may be produced. Large pendulous growths usually cause less serious discomfort than the small encircling tumors that extend downward into the thorax. Headache, somnolence and marked cerebral symptoms may occur, such as tetany and convulsions. The general health and nutrition seldom fail, unless inflammation and suppuration attack the goiter during the course of some infectious disease, as not infrequently happens; or in cases in which the thyroid function is abolished, leading to the profound nutritional and cerebral disorders of cretinism in children, or myxedema in adults. Sudden death may occur in rare cases, either from pressure on the vagi or from a severe hemorrhage. Auscultation often reveals a loud blowing murmur, especially marked in the vascular variety.

Diagnosis.—A tumor in close relation with the trachea and moving with it during the act of swallowing is an enlarged thyroid gland. The enlargement is usually greater on one side. The presence or absence of induration, fluctuation, palpitation or systolic thrill must be determined. If fluctuation is found it is in all probability a fibrocyt or simple goiter, or very rarely an abscess of the gland. If pulsation, thrill and murmur exist and the enlargement is unequal and varying, the associated symptoms usually will be found to declare it a case of exophthalmic goiter. If the pulsating enlargement is on the right side the possibility of its being either an innominate aneurism or a neurotic pulsation should be remembered. A solid enlargement is usually a simple goiter but may be due to an adenoma, cancer, tuberculosis or gumma of the gland.

Prognosis.—The prognosis, I believe we can say guardedly, is favorable as to cure, although this is contrary to most authors. The course is chronic.

Treatment.—Some authors lay great stress on prophylaxis, such as removal from goiterous districts and the drinking of boiled water only. The use of drugs is considered of very little value by most authors, and only surgical treatment is advised, but I believe this is not always necessary, and while I have not had so large an experience as they, I feel that the lack of success in the medical treatment is almost always due to not continuing treatment long enough. Since authors give such unsatisfactory treatment I will only give what I have used with not a few cases which have come under my observation.

I have made it a rule to tell my patients suffering with this disease that they will see little or no change in a month, that it will take from six to eight months to remove the enlargement. I have never recommended the use of tincture of iodine or any of the various applications externally. When in college the syrup of iodid of iron was recommended in doses of 7 to 10 drops. I used this on one

ease for a while, but as you all know, this is very liable to cause gastric disturbances. With this patient, about the time the enlargement began to decrease, gastric symptoms appeared. It having done well for the length of time used I tried to get some prescription using the drug that would lessen the gastric disturbances. I used the simple syrup which did better, but in using the lactated pepsin I could give it in even larger than half teaspoonful doses, three times daily, after each meal.

I also used a pill of creosotide, made by Nelson-Baker Co. (containing 25 per cent. of its weight of iodine); this is a quarter grain pill. I start this treatment with one pill after each meal for 5 days, then two after each meal.

With one or other of these methods I have but one case that did not improve as long as the treatment was continued. This case was a young man 22 years old, on whom I tried the syrup of the iodide of iron for about three months, with but little result, after which I used the violet ray and *x*-ray, giving three treatments per week, using the *x*-ray once in five treatments, and in three months' time the gland was of normal size and has continued so now nearly two years, with no untoward effects.

Another case was a woman, aged 50 years, with a very large goiter, so large that pressure symptoms were prominent. An eminent Chicago surgeon insisted on an operation. In my opinion the patient would not have survived the operation and I advised accordingly. I then placed her on syrup of iodide of iron. The pressure symptoms disappeared and the gland was reduced in size to 11.5 inches when gastric symptoms occurred. The treatment was discontinued and the gland has since increased in size. I am hoping soon to begin the use of the violet and *x*-ray treatment and am very anxious to see the result on this case because of the size and long standing of the goiter.

DISCUSSION

Dr. Petterson: I have had a few cases which gave good success with tincture of iodine and carbolic acid two or three times a week over a period of two months. Usually the tumor would get smaller. Give two drops of carbolic acid and ten to fifteen drops of the tincture, making deep injections. In some cases there would be a reduction of the tumor though it would not entirely disappear.

Dr. Jenks: I do not know that I have anything new to add regarding the treatment of goiter. In fact I believe there is no definite treatment except surgical treatment that can be depended upon for the removal of goiter. If you will recall the literature you will remember that there is scarcely a thing mentioned in our physiologies that has not been tried in the treatment of goiter and all of them, or nearly all, have been credited with affecting a reduction in the size of the goiter. At the same time all of you know that many goiters have been removed by various procedures which could not have any effect on the goiter, for instance the laying on of hands and various other things that have been used. It is a fact that the treatment (medical) of goiter and hyperthyroidism is in a very unsatisfactory stage. I have read some years ago a quotation from the elder Kocher on the use of iodine and the iodides. The iodides have been used very largely of course for many years in the treatment of goiters, and Kocher found that by using iodides for removing the tumor or reducing the size, very frequently resulted in hyperthyroidism. I have had the same result repeatedly by the use of iodides in trying to reduce the size of the goiters and I believe with Kocher that the iodides ought to be used with a great deal of caution, for in some cases the first thing you know the patient will not only have the tumor but a very marked hyperthyroidism in addition.

Dr. Tobin: The first thing that was used in the treatment of goiter was iodine and the more we experiment we still find that we are brought back to the fact that as yet we have but one drug, iodine, that has proven of value in the treatment of goiter. While Dr. Jenks states that surgical treatment is the only radical treatment, I feel that often we are just as much at sea in the surgical as we are in the medical treatment. I think many of the cases that get well in the medical treatment would get well just as they would under surgical treatment and vice

versa. Medical treatment as laid down consists in the altering of the internal secretion and our surgical treatment is the same. I think the only hope we have in the rational treatment of goiter is to come to a definite understanding as to what is the proper secretion of the gland.

Dr. Petterson: I want to say that in three patients with goiter I gave ammonium chlorid for liver trouble, and as soon as they took that the goiters began to increase in size. So be very careful.

Dr. McCawley: It seems to me in a discussion of this kind we should mention the effect of time. These patients usually are young girls that come to the office and you find they need general treatment. You give them general treatment and quite frequently ignore a thyroid. In the course of time the tumor has gone down and they are relieved of their symptoms. If you use a treatment of this kind give the credit where it belongs.

Dr. G. G. Schmitt: Outside of a few regions, like Switzerland, where the disease is prevalent in 30 to 40 per cent. of the population, the disease is more prevalent among the female sex and the development of the disease is principally between the ages of puberty until the end of the twentieth to twenty-fifth year. Of course it is more or less active until the menopause. I believe Dr. Bauer suggested that treatment ought to be begun rather early.

Dr. Rupert: Relative to the simple goiter, I am of the opinion that after all is said, a simple goiter should be left alone until it interferes with respiration and when it does, then I believe it is a surgical case. In looking over the literature we find certain parts of Switzerland where goiter is very prevalent, in fact it seems that a young lady there cannot get married unless she has goiter.

When a simple goiter gets to the stage where we have respiratory trouble I think we get but very little effect with the iodids. I believe that the treatment of many simple goiters is for a cosmetic reason rather than interference with respiration.

Dr. McCawley: Regarding the pressure symptoms, do you find that some of them complain of pressure symptoms when the gland is comparatively small?

Dr. Bauer: In regard to this question, I do not know that I have had that complaint very often except where the goiter is very large. The one I referred to in the young man 22 years old was undoubtedly on account of the size of the goiter. It was one of the largest I have ever seen. With the woman I mentioned I am sure it was on account of that. In that case I may say further that the right arm was practically paralyzed at the time of the operation. Another reason for taking up the medical treatment, while I believe there are cases where surgical treatment is the only relief, is that many times you cannot get the consent for a surgical operation.

Dr. W. H. Schwingel: Regarding the injections in cases of simple goiter, because I had repeatedly seen my professor use injections of alcohol and iodine and some carbolic acid, when I left school and had my first case of a simple goiter I thought this would be a sure cure. The patient I had in mind was 45 years of age with a large rather soft simple goiter. I started her with saturated solution of kalium iodid, ten drop doses, at the same time using alcoholic injections, ten minims once a week. About three or four weeks after starting this treatment (by the way the goiter had gone down very rapidly), I was called to the home of the patient and found her very much prostrated, with a pulse of about 140 to 150, very nervous and sweating very profusely. I took her to the hospital, called in Dr. B. but the rate of the pulse increased so rapidly that it was impossible to count it and in a few days she died. Now after death I examined the blood-vessels and found them very friable; you could crush them between the fingers. I think that served as a warning to be careful in using the injection method and internal iodid treatment. As our subject does not deal with exophthalmic goiters we will have to confine ourselves to the simple goiter. I believe that after twenty-five, or the developmental period, most of the simple goiters are irreducible no matter what method you use.

(To be continued in December issue.)

NEWS OF THE STATE

NEWS ITEMS

—Arrangements have been made for a large addition to St. Mary's Hospital at La Salle, Ill.

—Dr. Caroline Eaton, of Cambridge, Ill., was seriously injured by the explosion of a gasoline flat iron.

—Examinations were held at the Elgin State Hospital, October 12, for various state charitable institutions.

—Dr. William Barnes, of Decatur, has let the contract for a fire-proof building to house his valuable collection of lepidoptera.

—Dr. N. B. Ackley, of Colchester, has sold his practice to Dr. O. J. Ruth and will in a short time remove to Portland, Ore.

—The Association for the Prevention of Tuberculosis of Peoria is having lectures delivered in the public schools of that city.

—Dr. A. H. Kenniebrew, a colored physician of Jacksonville, suffered a broken scapula by being thrown from his buggy October 13.

—Dr. Clarence L. Wheaton has been appointed physician in charge of the male service at the Chicago Winfield Tuberculosis Sanitarium.

—The medical and surgical staff of Graham Hospital, Canton, elected the following officers: President, Dr. E. W. Regan; Secretary, Dr. Chas. N. Allison.

—Dr. H. H. Whitten, of Peoria, has bought the property and practice of Dr. Frederick Clark, of Batavia, Ill. He will alter the building and use it for a hospital.

—More than \$55,000 was obtained October 15 for the children's charities of Chicago through the efforts of 3,700 young women, who sold nearly half a million tags.

—The surgical appliances and instruments of the late Dr. D. W. Burlingame, Elgin, have been presented by his widow and daughter to the Sherman and Elgin hospitals.

—Dr. V. P. Perisho has received notice of his appointment by the Illinois State Dental Society as a member of the committee on cooperation with the Illinois State Medical Society.

—Fulton County Medical Society elected the following officers at its meeting held in Canton, October 1: President, Dr. C. D. Suively, Ipava; Secretary-Treasurer, Dr. D. S. Ray, Cuba.

—The small-pox epidemic which raged at Ladd, Ill., last winter, cost Bureau County \$1,650 for doctor's fees. Dr. J. J. Morgan, of Spring Valley, was allowed \$1,200, and Dr. C. H. Dunn \$450.

—Dr. Peter S. Weidman, of Edwardsville, met with a very painful accident when he missed his footing and was precipitated to the foot of a flight of stairs at the Leland Hotel, where he has been living for some time.

—Dr. William G. Todd, formerly of Elgin, but now of Chicago, celebrated his 91st birthday in that city. He was graduated with the first class from Rush Medical College, and is the only surviving member of that class.

—A warrant was issued against Oscar Evertz, of the Evertz School of Suggestion because he offered to give a patient fifteen lessons in suggestion for \$45, telling her he could not cure her, but she could learn to cure herself.

—Dr. Flint Bondurant, of Cairo, was painfully injured while riding in an automobile; the machine ran into a rut in the road and the jar that followed threw him upward, his head striking one of the steel pieces in the top of the auto.

—The sanatorium of the Lake County Tuberculosis Institution near Waukegan, heretofore known as the Tent Colony, changed its designation, October 4, to the Lake Breeze Sanatorium. At present it has twenty-seven patients.

—Dr. R. S. Klein, formerly professor of histology and embryology at the Fordham University School of Medicine, New York, has been appointed director of the new research laboratories of the Hahnemann Medical College, Chicago.

—The Proctor Hospital Board of Peoria held a meeting recently. Besides the election of officers, plans for building a nurses' dormitory in the spring were discussed with animation, and the much-needed addition is now considered a certainty.

—A movement now being on foot to compel doctors to write their prescriptions in plain English, the Edwardsville *Intelligencer* suggests that it also would be a good thing to make the doctors tell us what is really the matter when we are sick.

—The physicians of Hamilton County recently enacted a new fee bill which supersedes the one in force since 1876. They found it necessary to make a statement concerning the charges in all the papers in the county. The fee bill is signed by twenty-two physicians.

—An ordinance has been submitted to the Council of Belvidere providing for the conversion into a tuberculosis sanatorium of the present city hospital, which is located on a tract of fourteen acres, three miles south of the city on the highest point in St. Clair County.

—Palmyra and Modesto physicians have gotten together and established a uniform scale of fees. Under the scale city visits will be \$1.50; day visits in the country \$1.50, plus fifty cents a mile; night visits in the country \$1 extra. Other fees are advanced proportionately.

—Dr. John J. Stites, of Pontiac, a retired member of the medical profession, celebrated his 85th birthday anniversary September 25. He was born in Cincinnati, Ohio, and was a grandson of Major Benjamin Stites, an officer in the Revolutionary War. Dr. Stites has resided in Pontiac for forty-eight years.

—Dr. J. T. Gahm, of LeHarp, Ill., in August, had the misfortune of striking a buggy being trailed behind a load of furniture on the highway,

in which was seated a woman and two children. It was claimed that one of the children was badly hurt and it was awarded a judgment of \$750 in the trial recently held at Macomb.

—The trustees of the Passavant Memorial Hospital Association of Jacksonville are arranging for a campaign to raise a fund of \$50,000 or more for that institution. The work will begin October 17, with every prospect that that amount will be raised and a new building constructed to the west of the present structure.

—Dr. A. Ives, of Farmridge township, and Supervisor M. E. Hawley, of Vermilion township, each paid costs amounting to \$30, and settled the case outside of court which was to have been given a hearing in a justice court in Tonica, and which involved only \$16, the amount the doctor claims cost to have his machine repaired, as the result of a collision with the supervisor's machine.

—The twenty-fifth anniversary of the Scandinavian-American Medical Society, at Chicago, was celebrated October 10-11. On the first day Dr. William Jepson, Sioux City, Iowa, spoke on "Uncertain Phases of Surgery." Dr. A. J. Carlson, of the University of Chicago, spoke on "The Movement of the Empty Stomach and Its Relation to Hunger." The proceedings of this day were presided over by Dr. Ludvig Hektoen. The second evening was given over to a dinner and dance.

—A show calling itself the Parker, Dalton and Parker show, held forth at Cerro Gordo last week. Each night one of the "doctors" gives a medical talk and in the talk he makes a point of telling how highly moral and religious he and the rest of the company are. But on Sunday night one of the "doctors" was coming back from Decatur and he was so drunk he could not get into a seat by himself, and on Monday the other "doctor" was arrested in Decatur and locked up for being drunk and disorderly.

—The Illinois Association for the Prevention of Tuberculosis met in Springfield, October 19; this meeting being held in conjunction with that of the Illinois State Conference of Charities and Correction. The chief subject for discussion was "Antituberculosis Work in the Smaller Cities," and the speakers were Drs. J. W. Pettit, Ottawa, and George T. Palmer, Springfield. A part of the day was spent in visiting the dispensary and visiting nurse services of the Springfield Tuberculosis Association.

—The medical profession of Chicago entertained the group of physicians who are making a tour of the United States under the auspices of the German Central Committee for Physician's Study Travel. From Chicago they went to New York via Niagara Falls, Montreal and Boston. They were kept busy in Chicago by clinics, visits to hospitals and public buildings, a trip through the famous stock yards, automobile drives about the parks and boulevards, and various social functions including a Komers and a banquet.

—A meeting of the surgical and medical staff of Graham Hospital, Canton, Ill., was held October 1, when the following officers were elected for the ensuing year: President, Dr. E. W. Reagan; Vice-President, Dr. J. E. Coleman; Secretary, Dr. C. N. Allison. Committees were appointed

as follows: Lectures to nurses, Drs. H. C. Putman, P. S. Scholes, J. E. Coleman, W. T. Zeigler and C. N. Allison. The staff is composed of Drs. W. T. Zeigler, J. E. Coleman, H. C. Putnam, C. A. Allison, E. W. Reagan and P. S. Scholes.

—Dr. Louis Rosenberg, 4820 Champlain Ave., Chicago, was arraigned before Municipal Judge Hopkins on a charge of obtaining money on false pretenses from George M. Klein, 4805 South State Street, and Miss Ida M. Schultz, 4758 So. Michigan Avenue. Klein said he paid Rosenberg \$400 on the latter promising to fit him perfectly with eye-glasses, and also to admit him to membership in the Masonic Order. Miss Schultz charged that Dr. Rosenberg obtained \$75 of her money and promised to cure a defect in her eye-sight.

—The Supreme Court is to review the damage suit of Mrs. Virginia V. Barton against Dr. George E. Southwick, of Cotton Hill, which was originally tried in the Sangamon County Circuit Court. The case was tried in June, 1911, by a jury and resulted in a verdict for \$2,300 in favor of Mrs. Barton. On appeal to the Appellate Court this finding was reversed and the case now goes to the Supreme Court on a writ of certiorari. Mrs. Barton's suit against Dr. Southwick was based on the ground that she was given improper treatment. Prior to the determination of the litigation in the Circuit Court, Dr. Southwick filed a proceeding to recover pay for his services, and this was decided in his favor. When the appeal was taken to the Appellate Court Dr. Southwick's judgment was a bar to the damage suit, the question of his liability for alleged malpractice having been determined in his suit against Mrs. Barton. The Appellate Court took this view of the case and decided for the doctor.

—Sharp criticism of railway hospitals for employees conducted by railroad companies that compel employees to maintain them, was made by Dr. Frank Allport, of Chicago, at the afternoon session of the ninth annual meeting of the American Association of Railway Surgeons in the Hotel LaSalle. These men are compelled to accept membership in these hospitals of beneficiary associations, he asserted. The management is conducted practically by officials of the road, who, when placed on the defensive, seek refuge in the claim that they are responsible for any deficit. However, the membership fees are so arranged that there can be no deficit. The railway surgeon suffers through these associations. He suggested that a railroad medical fee bill be established by medical associations; that surgeons receive reasonable compensation from railroads, and that the profession discourage railway insurance associations. Dr. O. J. Fay, of Des Moines, discussed diagnosis. Several others spoke on technical problems.

—Dr. Carl E. Black recently addressed the High School students of Jacksonville on "The Profession of Medicine." Among other things he said:

Every student should choose some calling to be held up as an ideal to be striven for. One may not reach the ideal, but a person is the better for having aimed high. If the student's aim is to make money, he should enter business. If fame

be the motive, law and engineering will give a much surer return than medicine. But if personal service to fellowmen be the idea, then medicine offers greater opportunities.

The study of Latin aids greatly in the mastery of medical terms. Modern medicine demands careful training in laboratory practice, for the intelligent doctor must be a skilled scientist. The most advanced work in this line is being done in Germany and France, and for this reason a reading knowledge of German and French is valuable. But the most important preparation of all is simply "to learn to study." To keep up with the rapid advancement of the profession requires constant study on the part of the busy practitioner.

No profession is more overerowed than medicine. In Germany there is but one doctor to every 1,500 of the population. In this country there is a doctor to every 450 people. No other profession has so many poorly prepared members. The young doctor must expect, therefore, not only to meet honest competition from men properly prepared but the unfair methods of the advertising quack. Only merit of a high order can expect genuine success in medicine.

—Dr. W. A. Young, of Springfield, contributes the following important item to the Sangamon County Medical Society *Bulletin*:

KANSAS BLUE-SKY LAW

This very ingenuous statute is interesting from every angle to the laity in general and to the busy practitioner of medicine in particular. It has been in force in the progressive state of Kansas for several years to date and is proving a boom to the gullible doctor of medicine. Briefly stated, it provides for: A state bank commissioner and assistants, whose duty it is to examine all stocks, bonds, corporations and individuals offering such for sale. A fee of \$2.50 is required of the applicant at the time of making application for a permit. In addition to this, the applicant must defray the expenses of such an investigation. The commissioner, who is an appointed state official, decides on the validity of the stocks or bonds and the character of the agent. In case a permit is granted, a sworn report of the condition of the stocks is required every six months. On account of lack of time, for investigation and business ability, the busy man ought to be vitally interested in having placed on the statute books of this state such a law against fraudulent promoters. Such a bill will be introduced at the next general assembly meeting and ought to have the active support of every member of the profession.

PERSONAL

Dr. Sheppard will open an office in Winnebago, Ill.

Dr. L. H. Beck will open an office in Plainfield, Ill.

Dr. A. A. McBryen, of Hillsboro, will remove to East St. Louis.

Dr. O. W. Allison, of Catlin, has resumed his practice in that village.

Dr. and Mrs. Wm. T. Gilman, Chicago, have returned from Europe.

Dr. A. W. Lindberg has purchased property and will practice at Hillsboro.

Dr. E. C. Burt, Jr., of Henry, Ill., will locate at Belvidere, Boone County.

Dr. J. C. Roberts, of Peoria, has recently returned from a sojourn abroad.

Dr. J. H. Bacon, of Peoria, is spending three months in London, England.

Dr. T. W. Gillespie, of Peoria, was operated on for appendicitis recently.

Dr. William G. Todd, Chicago, celebrated his 91st birthday, September 27.

Dr. James Ross, of Colorado Springs, Colo., will next month locate in Moline, Ill.

Dr. D. C. Harmison, of Havana, recently celebrated the fortieth anniversary of his practice.

Dr. W. V. Secker, of Tolono, has removed to Champaign, with offices in the Smith Building.

Dr. E. E. Barbour, of Peoria, is spending a month in post-graduate work in New York City.

Dr. W. A. Haskell, of Alton, was confined to his home the greater part of the last month by illness.

Dr. P. B. Magnuson, Chicago, has been appointed chief surgeon of the Chicago and Alton Railroad.

Dr. S. M. Blunk, of Chicago, has located in Virden, where he will take up the practice of his profession.

Dr. Hyde West, of Taylorville, has gone to Woodstock, where he is forming a partnership with Dr. J. E. Guy.

Dr. Charles W. Hunter, Oneida, who was operated on recently in Chicago, has returned home convalescent.

Dr. Flint Bondurant, Cairo, was seriously injured in an automobile accident near Mound City, September 23.

Dr. Frank W. Blatchford, Winnetka, was seriously injured October 2, by being run over on cranking his automobile.

Mr. G. Schmit, of Chicago, will contribute \$1,000 toward the Beardstown Hospital. He formerly resided in that city.

Dr. Amos Sawyer, the oldest physician in Hillsboro, was recently stricken with paralysis and is in a serious condition.

Dr. Fenton B. Turck, Chicago, has removed to New York City, where he has purchased a home at 14 East Fifty-Third Street.

Dr. Clifford U. Collins, President of the Peoria Association of Commerce, attended the Waterway Convention at Little Rock.

Dr. William L. Ballenger, Chicago, who received an injury to his foot while returning from England a few weeks ago, has recovered.

Dr. and Mrs. A. C. Armbruster, who have spent the past year in North Carolina, have returned to their home in Collinsville, Ill.

Dr. Clarence L. Wheaton has been appointed physician in charge of the male service at Chicago Winfield Tuberculosis Sanatorium.

Dr. John M. Lang has been appointed instructor in clinical gynecology at the Illinois Post Graduate Medical School, Chicago.

Dr. and Mrs. F. E. Tulley, of Granite City, returned last week from a 5,000 mile automobile tour of New York and other eastern places.

Dr. A. D. Taylor, of Springfield, retired from active practice temporarily on July 1. He intends a prolonged rest until late in the winter.

Dr. D. A. Vanderhoof, of Rockford, Ill., is spending a year's vacation in Colorado Springs Colo., after which time he expects to locate there.

Dr. George Bley, of Beardstown, has gone to Chicago, where he will spend two weeks taking a post-graduate course in medicine and surgery.

Dr. E. E. Gelder, of Peoria, is in Europe, having gone abroad immediately after his wedding last spring. He will return in April, 1913.

Dr. G. F. Stericker, of Springfield, has secured Dr. H. T. Morton, of Kansas City, late interne at the Springfield Hospital, to assist him in his work.

Dr. G. Frank McLaren, of Whitehall, has been appointed surgeon for the Burlington Railroad; his territory is between Beardstown and St. Louis.

Dr. W. T. Bowman, of Moweaqua, Ill., has purchased the office and fixtures of the late Dr. James L. Lowrie, of Lincoln, and will locate in that city.

Dr. Joseph Young has been appointed medical advisor for women for the junior and senior years in the University of Chicago and the School of Education.

Dr. Charles P. Small has resigned as University Physician to the University of Chicago, and will hereafter devote his entire time to his special line of work.

Dr. R. L. Eddington, who has been practicing in Springerton for eight years, has left that village to take post-graduate instructions in Chicago and will locate elsewhere.

Dr. J. W. Dobson, of Bloomington, has purchased the property and practice of Dr. W. L. Bowman at Moweaqua, and will practice there. Dr. Dobson formerly resided there in 1894-95.

Dr. Frank W. Larrabee, formerly of Alton, was granted a divorce from his wife, Mrs. Bertha W. Larrabee, at Reno, Nev., September 23, on the grounds of extreme and repeated cruelty.

Dr. Barrett B. Griffith, one of the leading physicians of Springfield, who has been at Colorado Springs for the past two years, recovering from an infection of the foot, has returned and will resume practice in his new offices in the Hagler Building.

Dr. C. C. Hunt, of Dixon, has given up practice, and will, with Mrs. Hunt, go to Seattle, Wash., to spend the evening of his life. Dr. Hunt has been a well known practitioner in northern Illinois for many years, and will be greatly missed in his community.

REMOVALS

Dr. V. C. Morton, of Peoria, has removed to Rantoul.

Dr. S. O. Eads, of Decatur, has removed to Danville, Ky.

Dr. A. D. Steele, of Chester, has removed to LaJunta, Colo.

Dr. M. F. Savage, of Bloomington, has removed to Stanford, Ill.

Dr. F. W. Nickel has removed from Jacksonville to Eureka, Ill.

Dr. Jordan Parker, of Yates City, Ill., has removed to Normal, Ill.

Dr. J. B. Taylor has removed from Bloomington to Springfield, Ore.

Dr. Edmund P. Arens, of Longview, has removed to Detroit, Mich.

Dr. J. M. Threadgill has removed from New Douglas, Ill., to St. Louis, Mo.

Dr. H. W. Dale has removed from McLeansboro, Ill., to West Lebanon, Ind.

Dr. Hyde West has removed from Taylorville to 4503 N. Ashland Avenue, Chicago, Ill.

Dr. Lorenzo N. Grosvenor, of 1514 Cornelia Avenue, Chicago, has removed to Huron, South Dakota.

NEW INCORPORATION

Chicago Medical Association, Chicago; capital, \$2,500; general drug business, also to operate a hospital; incorporators, David Apfelbaum, Edwin Logan Reeves, Harry A. Tiffany.

PUBLIC HEALTH

—The Department of Health in Elgin has opened a laboratory for the use of the physicians in that city.

—A clinic in defects of speech and voice has been added to the nose, throat and ear department of Rush Medical College, Chicago.

—The Department of Health, Chicago, has issued for distribution to physician and others interested a leaflet on anterior poliomyelitis, or infantile paralysis, outlining the safeguards against the spreading of the disease.

—The thirty-eighth annual meeting of the Mississippi Valley Medical Association was held at the Sherman House, Chicago, October 22-24, in accordance with the announcement published in *THE JOURNAL* for October. The splendid arrangements for the comfort and entertainment of the visiting members of the profession reflect the greatest credit on the members of the local committees in charge. Chicago has once more demonstrated that it is the convention city par excellence. The joint meeting with the Chicago Medical Society, Wednesday evening, was held in the Northwestern University Hall. Owing to illness the president of the Chicago Medical Society, Dr. Jacob Frank, was unable to be present. The secretary, Dr. P. J. H. Farrell, introduced Dr. Louis Frank, President of the Mississippi Valley Medical Association, who delivered the presidential address. Dr. Charles G. Stockton, of Buffalo, delivered the address in medicine, "The Stomach from the Standpoint of the General Practitioner, the Specialist and the Surgeon." Dr. George W. Crile, of Cleveland, delivered the address in surgery, "Biologic Interpretation of Abdominal Pain and Its Surgical Relation." The attendance at this session taxed the capacity of the large hall and the speakers received an ovation.

Among the exhibits, that of the Chicago Department of Health attracted much favorable attention. Dr. C. St. Clair Drake's ventilation

and baby death-rate models were the center of admiring and interested groups constantly.

The following officers were elected: President, Dr. Albert E. Sterne, Indianapolis, Ind.; First Vice-President, Dr. D'Orsay Hecht, Chicago; Second Vice-President, Dr. Hugh Cabot, Boston, Mass.; Secretary, Dr. Henry Enos Tuley, Louisville, Ky. (reelected); Treasurer, Dr. Samuel C. Stanton, Chicago (reelected). The Association accepted the invitation of New Orleans, and fixed the date of meeting as the last Tuesday, Wednesday and Thursday of October, 1913. The attendance at the sessions was more than 700, of which the usual one-third registered.

MARRIAGES

FREDERICK C. HANMORE, M.D., to Miss Vera Cleary, both of Chicago, October 2.

WILLIAM G. BEEK, M.D., to Miss Irene Wallace, both of Chicago, October 16.

ROY ROGERS, M.D., to Miss Bertha Andrews, both of Springfield, Ill., October 17.

HARRY JACKSON, M.D., to Miss Theresa Wertheimer, both of Chicago, September 10.

EDWIN EVERETT MADDEN, M.D., to Miss Marion Hyman, both of Chicago, recently.

WILLIAM FRANCIS DRYDEN, M.D., to Miss Edith E. Hall, both of Chicago, September 14.

JOHN HENRY EVANS, M.D., to Miss Camille Margaret Boileau, both of Chicago, September 23.

WILLIAM SHERMAN BOUGHER, M.D., to MARION S. WALLACE, M.D., both of Chicago, August 28.

ALEXANDER DONALD FERGUSON, M.D., to Miss Dorothy Williams, both of Chicago, September 25.

J. N. DEVINEY, M.D., of Champaign, to Miss Madge L. Wilson, of Philo, Ill., September 24, 1912.

GEORGE H. STACY, M.D., and Miss Anna Victoria Ridgway, both of Jacksonville, Ill., were married October 9.

J. M. BOHAN, M.D., of Galesburg, Ill., was united in marriage to Miss Florence Lynch, of Monmouth, September 24.

WILLIAM BUCKLEY PECK, M.D., Freeport, Ill., to Miss Alvina Scherf, of Rockford, Ill., in Chicago, September 26.

JOHN QUINCE ROANE, M.D., of Carlyle, was married to Miss Nellie Gertrude Steele, of Whitewater, Wis., October 9.

L. L. YERKES, M.D., of Upper Alton, Ill., to Miss Cora Wright, of Upper Alton, October 15, 1912, at Edwardsville, Ill.

WILLIAM WEIRICH, M.D., formerly of Alton, but recently of Jacksonville, was married to Miss Virginia Walker, of Waterloo, Ia., recently.

FRANK W. LARRABEE, M.D., formerly of Alton, but later of Reno, Nev., was married in October to Miss Ella Smith, of Clairemont, N. H.

T. W. CURRY, M.D., of Streator, Ill., was married September 21, to Miss Eveline Edwards, of Ruth, North Wales; the wedding ceremony was performed in that city. Dr. Curry and wife will return to Streator to reside.

DEATHS

ALBERT GALLATIN JONES, M.D., died at his home in Lexington, Ill., Wednesday, September 18, 1912, aged 85.

JAMES R. CALDWELL, M.D., Harvey Medical College, Chicago, 1898; of Chicago; died at his home September 21, from myocarditis; aged 68.

EDWARD M. FULLER, M.D., Hahnemann Medical College, Chicago, 1890; a member of the American Medical Association; died at his home in Chicago, October 3; aged 70.

BENJAMIN GRIFFITH MILLER, M.D., died at his home in the Smith Hotel at Pontiac, Tuesday, September 24, 1912; age 80. Death was due to Bright's disease and old age.

W. E. FITZGIBBONS, M.D., a practitioner of Wataga until about two years ago, died at St. Mary's Hospital, La Salle, Ill., October 3, 1912; aged 53. Death was due to heart trouble.

J. B. RIGNEY, M.D., of Arthur, for more than forty years a practitioner of that place, died September 24, 1912, aged 72. His death was due to muscular spasm of the diaphragm following an attack of paralysis.

JAMES C. HALLOWAY, M.D., Homeopathic Medical College of Missouri, St. Charles, 1886; of Galesburg, Ill.; formerly a clergyman of the Christian Church; died after a surgical operation, August 25, in a Chicago Hospital.

JEAN I. GLIDDEN, M.D., of Mt. Carroll, died at the Globe Hospital, Freeport, Ill., October 14; aged 52. Death was due to severe burns which Dr. Glidden sustained last spring when a pot of paint which she had placed on the stove to warm became ignited.

GEORGE HUNTIN GROBER, M.D., College of Physicians and Surgeons, Chicago, 1909; a member of the Illinois State Medical Society; formerly of Chicago and later of Kelliher, Minn.; was found dead in his room in a hotel in Wadena, September 2, from the effects of an overdose of morphin; aged 24.

GEORGE FROST, M.D., Dearborn Medical College, Chicago, 1906; of Chicago; a member of the Illinois State Medical Society; instructor in clinical surgery in his alma mater and an employee of the health department of Chicago; died in the Chicago Avenue Hospital, September 9, after an operation for malignant disease of the throat; aged 51.

FRED G. CRETORS, M.D., of Paris, Ill., died at the Michael Reese Hospital, Chicago, Ill., October 18. Although a sufferer from diabetes for some time, his death was unexpected. He was born in Paris, Ill., July 7, 1867; in 1897 he entered the Chicago Homeopathic Medical College, and graduated from that institution in 1901. He practiced for a short time at Mason City, Ill., later removing to Paris, where he has since been located.

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ORIGINAL ARTICLES

SOME STATISTICAL STUDIES AND A PLEA FOR AN IMPROVED VITAL STATISTICS LAW IN ILLINOIS *

HENRY G. OHLS, PH.B., M.D.

CHICAGO

Some wag has said: "Liars are of three kinds: liars, damliars and statisticians." I think he was guilty of a slight exaggeration owing to his *cursor*y view of the subject. Whatever the shortcomings of individual statisticians, the science of statistics should not be held responsible for their vagaries any more than Holy Writ should be held responsible for such illegitimate children as Mormonism and Christian Science.

Vital statistics may be defined as the mathematical study of social phenomena. Its foundation and working materials consist of enumerations of births, deaths, marriages, sickness and other vital occurrences that constitute the really great events in life. The applications of vital statistics are in daily use wherever efforts are being made to improve living conditions, prevent sickness and lengthen the span of life. Its application to the problems of life surpasses the pursuit of wealth *per se* as much as babies surpass pigs. Goldsmith's couplet is all gold yet, whether considered from a moral or physical standpoint.

"Ill fares the land, to hast'ning ills a prey
Where wealth accumulates and men decay."

"Social facts are known fully only when they are measured, and statistics are the yardstick by which that measure is taken. . . . Where would the world be to-day in its fight against typhoid fever but for the statistics that have proved every step that has been taken and have given the information upon which each succeeding step could be made?"¹

* Read before the North Shore Branch, Chicago Medical Society, Nov. 5, 1912.
1. Haskin, Frederick J.: The Daily News, Oct. 2, 1912.

"The discoveries in the astronomical observatory have no more certain application to navigation, nor chemical research to manufacture, than have the statistics of life and disease to the protection of the human race."²

Dr. W. S. Rankin, the energetic Secretary of the North Carolina State Board of Health, states the case so well for vital statistics that I will quote his article at some length:³

WHAT ARE THE VITAL PHENOMENA OF THE COMMUNITY OR SIGNS AND SYMPTOMS OF PUBLIC HEALTH OR DISEASE?

A true story will lead the way to the answer of this all important question.

A short time ago a gentleman came into the office and introduced himself as representing the Baron Hirsch fund of millions of dollars, which was bequeathed for the social and industrial advancement of immigrant Jews to the United States. The visitor stated that he was engaged in investigating agricultural and health conditions in the Southern States, and would devote eight or nine months to his task. Some time previously a colony of Jewish immigrants had been placed in Texas; the colony had not been there long before several of them died of malarial fever. Being unaccustomed to malaria, the disease had all the terrors to the newly colonized immigrants of a new and strange disease. The colony at once disbanded and left, and the property had to be sold at a loss. The board of directors of this fund were, therefore, interested in the health conditions of the South as well as in her agricultural resources.

The gentleman stated that they would locate several colonies, and each colony would be composed of from 50 to 100 Jewish families and equipped with cooperative banks, stores, and other conveniences of a thoroughly modern, progressive community. He said that they proposed to purchase from 5,000 to 50,000 acres of land and to invest from \$500,000 to \$1,000,000 in each colony.

This gentleman had begun his investigation in Washington. He had first gone to the Department of Agriculture and secured very full and satisfactory information with regard to agricultural conditions in the Southern States. He had been directed to call on Dr. Cressy L. Wilbur, Chief Statistician of the Bureau of the Census, as the man from whom he could get information as to the comparative healthfulness of different sections of the country and states. When he made this request of Dr. Wilbur, that official pointed to a large map of the United States hanging near at hand on the wall. Said he, "You see the map is made up of some states in red and others in white; ask me anything you wish about the health of the states in red and I can give you exact information. As to the health of the states shown on the map in white, there is no man on the face of the earth that can tell you anything." The red states were in the northeast and west, and the white states in the south.

From Washington this gentleman began a tour of the Southern States. When he arrived in Raleigh he first called upon the Commissioner of Agriculture and obtained information from that official regarding the agricultural resources of different parts of this State. Following his visit to the Department of Agriculture he called at the office of the State Board of Health to inquire about health conditions of the different sections and of the various counties of North Carolina. After the usual introductory remarks our visitor began to ask some very direct and significant questions. The writer will, as near as he can remember, reproduce these questions and the answers that he made to them.

"Which is the healthiest section of North Carolina?"

"There are no facts at hand to justify an answer to that question."

"Which is the healthiest and which is the unhealthiest county in North Carolina?"

"I don't know."

2. Walcott, Henry P.: Jour. Am. Med. Assn., Oct. 12, 1912, p. 1339.

3. Bull. North Carolina State Board of Health, September, 1912.

"Do you mean to say that this office, representing the State of North Carolina, entrusted with the heavy responsibility of studying health conditions in the State with a view of informing the public about the prevalence of the different diseases, and suggesting appropriate remedies, admits that it does not even know the distribution of diseases in the State, does not know the county most needing the assistance of the State Board of Health, the county least needing this assistance, the county where the most tuberculosis exists, the county where the most typhoid exists, the county where most babies are dying, etc., etc.?"

"I am ashamed to admit that this is true."

"Well, why don't you know these things?"

"The information which you seek can only be obtained through a law requiring the registration of all deaths on a regular blank form which gives, in addition to the cause of death, the race, sex, age, social condition, and a few other less important data concerning the decedent. If all deaths occurring in the State were so registered and properly compiled in a central office, then I could tell you the county in which the largest number of people per thousand of the population die annually; the county in which the smallest number per thousand of the population die annually; I could tell you the county in which the average age attained at death was greatest, and the county in which the average age attained at death was least; I could tell you the county where the deaths for a given number of the population was greatest from consumption or from typhoid fever, or from malaria, etc.; I could tell you the counties freest from these diseases, etc.; in short, I could give you the facts about the comparative health of the different sections and various counties of this State on which any intelligent person could reach positive conclusions regarding the healthfulness of any part of North Carolina."

"How can you do satisfactory health work without this knowledge?"

"We can't. All we can hope to do is to enforce the State laws protecting public water supplies, to maintain a State Laboratory to analyze the public water supplies, to consult with and advise county and municipal authorities about local health matters, and to carry on a general educational campaign along sanitary lines, trusting that widely disseminated information as to the methods of preventing the more important diseases is resulting in the saving of many lives, and hoping some day to get the people to the point of seeing the importance of the knowledge that you seek. Treating a sick public without the facts that you desire is just about as unsatisfactory as a physician's treatment of a patient whose symptoms are unobtainable."

"I see. What you need then in North Carolina is a vital statistics law requiring the registration of all births and deaths. Such a law would give you the information that I want, and information that is absolutely *necessary* to the intelligent prosecution of the work of the State Board of Health."

"Exactly. Vital statistics are to the health officer just what symptoms of diseases are to a physician. Through the presence of symptoms the physician recognizes disease and studies the effect of his treatment; through vital statistics the health officer recognizes the sick social organism, the sick town, county, or state, and estimates the effect of health administrations by the reduction of death rates."

Conclusion: The vital phenomena of the social organism, of the public, are its vital statistics. The vital statistics of a community, town, county, or state are the only known means of reaching intelligent conclusions regarding the health thereof.

I could go on piling up arguments from the public health literature like "Ossa upon Pelion," as Virgil said, but will assume that the value of vital statistics is admitted.

There are two main methods of recording vital statistics each having its strict limitations, viz.: enumeration and registration. Enumeration

is applicable to such data as exist and can be counted on a certain date. In general, enumeration is suitable for census work. The English system of making the count on one night is practical in a dense population in a limited territory. The other main method is registration. This method is applicable to data that are more or less discontinuous and variable, and are at the same time necessary for *immediate* use in public health work. This applies to reports of births, deaths and cases of contagious and communicable diseases. The *enumeration* of births was formerly tried by the United State Census Bureau and found to be wholly inadequate. Parenthetically, I may say that much of the work of the Census Bureau is rendered valueless by niggardly appropriations by the Congress which delay the work of the Bureau, as noted in the editorial in *The Journal of the American Medical Association* for October 12, 1912, p. 1383. The Director of the Census, L. Dana Durand, who courteously furnished me a

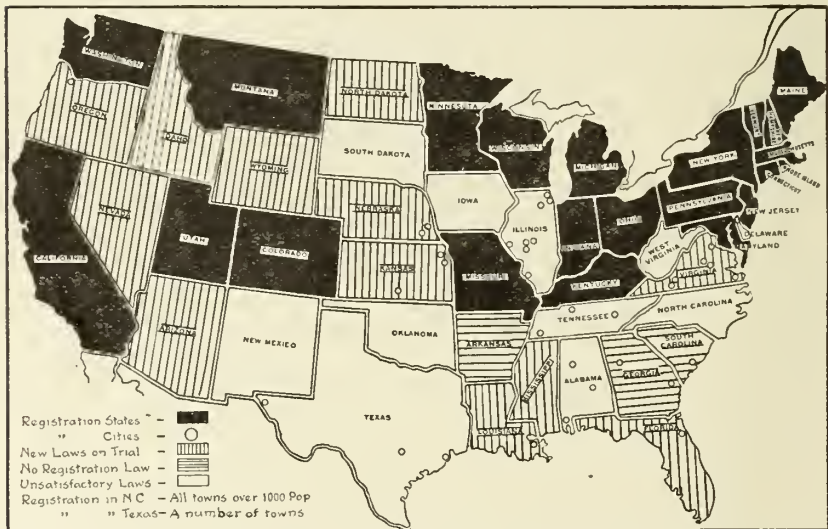


Fig. 1.—Map 1. Showing status of registration. (Data taken from the map furnished by Dr. Cressy L. Wilbur.)

valuable compilation giving the population of Chicago by ages and nationality (American or foreign born) could not promise to furnish the foreign population distributed by countries of birth for "several months."⁴ The Census Bureau is working constantly to improve American vital statistics by collaborating with the States in the enactment of improved laws. In conjunction with the American Public Health Association, the Council on Health and Public Instruction of the American Medical Association, the American Association for Study and Prevention of Infant Mortality, the American Bar Association, health officials and others interested in the subject, the Census Bureau has elaborated a "Model Law" for vital statistics and has aided in having it enacted in Pennsylvania (1906), Ohio (1909), Kentucky and Missouri (1911). The splendid

4. Durand, L. Dana: Letter, Sept. 14, 1912.

results of this law as demonstrated in its practical working, especially in Pennsylvania where it has been in operation longest, has proved an inspiration to health officers everywhere to attempt the revision of inadequate laws.

The details of public health work and their dependence on full and accurate statistics I will illustrate by examples that come to my daily experience. I will choose examples illustrative of the use of statistics in the control of contagious and communicable diseases and in the work for the prevention of infant mortality in use in the Chicago Department of Health, both because the principles involved in city and state work are the same, and further, because similar methods are applicable having regard to different conditions.

You are all familiar with the report cards notifying the Department of cases of contagious diseases occurring in your practice. These cards

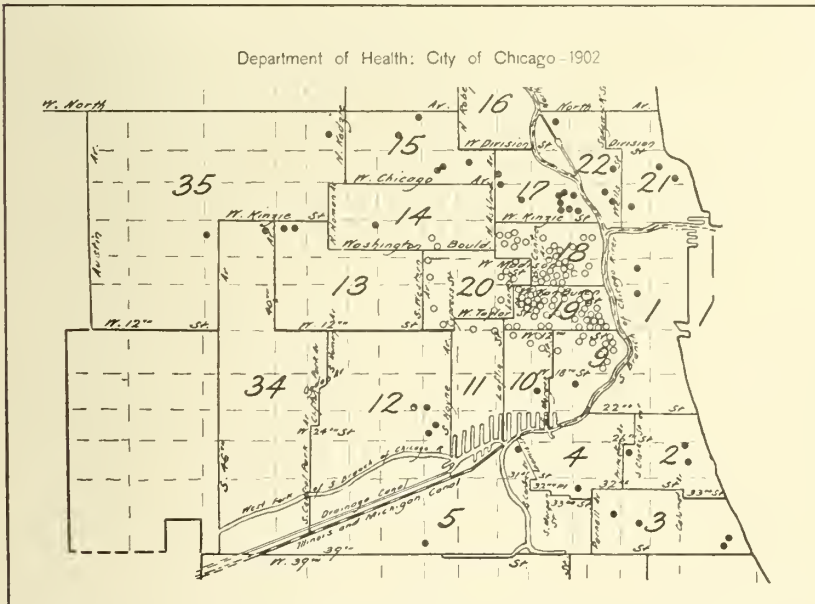


Fig. 2.—Map 2. Small circles indicate location of deaths in area of Harrison Street pumping station. Round spots indicate deaths outside above area.

mention whether the patient is connected with any place of business. The cards are tabulated on receipt by the Department and arranged by addresses, and health officers are sent to instruct and enforce quarantine. The cases are entered on the milk dealers' charts so that any undue number in the families supplied can be noted. Spot maps are made showing the location of cases and their extension and recession from day to day and week to week. Thus local conditions and the relations of epidemics to schools and milk supplies are under constant supervision. When the distribution of cases points to the water or milk supply as involved, inspectors are dispatched to investigate. In a localized epidemic

of typhoid in the vicinity of Halsted and West Harrison streets in August, 1902 (shown in Fig. 2, Map 2), the attention of the Department was called by the distribution of cases to the water supply from the Twelfth street pumping station. On investigation it was found that the sewer had flooded the water reservoir at that point. Repairs to the sewer and reservoir promptly terminated the epidemic which was beginning to assume alarming proportions. Of the total 402 typhoid deaths from July to September, 1902, 180 were in this area.

In November, 1910, and again in July, 1911, epidemics of typhoid in Englewood were traced to a dairy farm in Blue Island; the second epidemic being due to a carrier employed on the farm, although she had not had typhoid fever since 1908. In both cases it was the study of the factors involved reduced to a statistical basis that exposed the source of infection (Fig. 3, Map 3, and Fig. 4, Map 4). The following tabulation (Table 1) shows the great excess of typhoid in Englewood in the two epidemics in bold-faced type:

TABLE 1.—CASES OF TYPHOID FEVER REPORTED BY WARDS

Ward	1910			1911			
	Oct.	Nov.	Dec.	May	June	July	Aug.
1	15	8	2	0	4	6	6
2	5	1	2	1	2	2	2
3	5	6	2	2	2	1	1
4	9	5	3	0	2	1	2
5	9	7	3	3	2	1	2
6	11	7	3	1	4	5	4
7	15	6	17	3	2	3	6
8	11	7	4	3	7	1	7
9	5	5	2	0	0	1	6
10	4	4	1	3	0	5	1
11	8	4	2	5	2	3	3
12	5	8	2	7	3	4	3
13	6	5	4	1	2	0	4
14	9	2	2	1	0	1	2
15	5	2	5	2	0	1	4
16	12	11	6	6	0	1	2
17	6	8	0	3	3	3	11
18	13	10	4	2	6	3	10
19	9	5	8	3	0	4	3
20	7	13	5	3	0	1	1
21	5	9	3	1	0	2	3
22	6	7	5	1	0	1	2
23	8	10	6	2	4	2	5
24	2	4	2	0	0	0	2
25	13	7	11	2	2	4	6
26	3	3	2	0	1	4	6
27	13	7	6	3	2	2	8
28	8	4	4	2	0	0	3
29	20	6	4	3	0	5	8
30	7	3	1	0	1	3	2
31	29	24	7	0	18	27	8
32	5	61	16	1	20	13	4
33	9	10	3	4	1	3	6
34	6	3	2	3	2	1	5
35	6	4	5	0	4	2	5
Hospitals	44	19	8	13	7	14	14
Elsewhere	0	8	3	2	2	1	1
Total	353	313	165	86	105	131	168

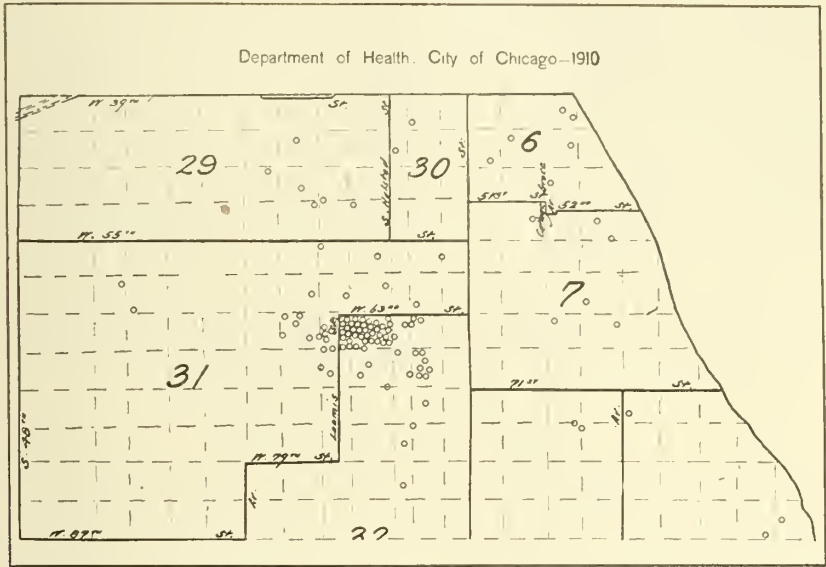


Fig. 3.—Map 3. Small circles indicate cases of typhoid fever occurring in November, 1910.

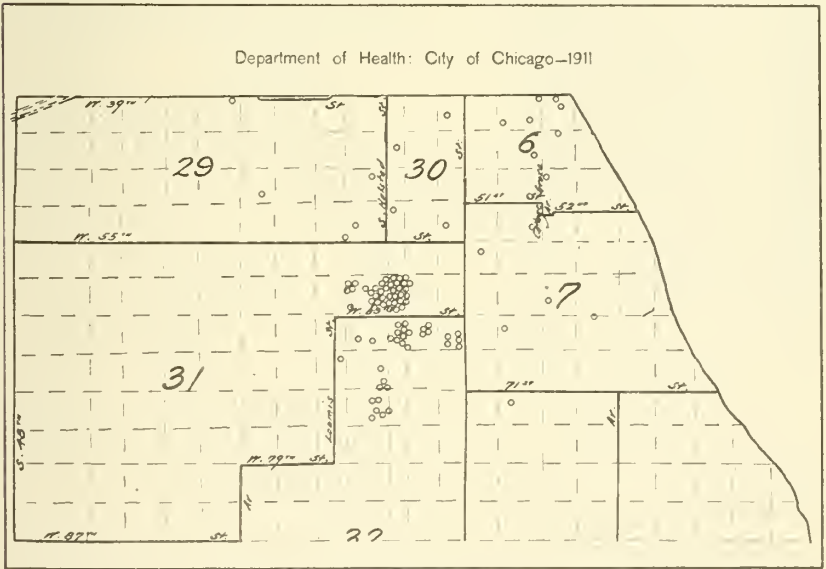


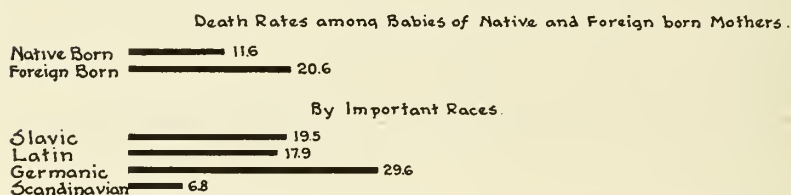
Fig. 4.—Map 4. Small circles indicate cases of typhoid fever occurring from June 19 to July 29, 1911.

It was in the study of infant mortality that my attention was first attracted to the very deficient status of the available statistics. I had noted year after year the prevalence of infant deaths from diarrheal diseases in the congested wards of the city, as shown on the spot maps, and the large number of deaths among the children of mothers of different nationalities. It occurred to me that the *percentage* of children of mothers of these nationalities would point the way to more effective work of an educational character, but until within seven days I found it utterly impossible to secure any statistics that would throw light on this subject. As above described the data from the Census of 1910 is not yet available. Last spring I took up the subject with Mr. Bodine, Superintendent of Compulsory Education, in charge of the School Census, who undertook to

THE RELATION OF NATIONALITY OF MOTHERS TO DEATHS FROM DIARRHEAL DISEASES
OF CHILDREN UNDER TWO YEARS OLD.
July-September, 1912.

Death Rates per 1000 Living Children

Based on School Census, May, 1912



Children of Mothers born in		Death Rates per 1000 living children under 2 years old.			
		25	50	75	
Slavic	Lithuania	15.1			
	Poland	20.8			
	Hungary		48.7		
	Bohemia	11.5			
	Russia	17.8			
	Other Slav	0.4			
Latin	Italy	17.6			
	Other Latin	21.9			
	Austria			76.4	
Germanic	Holland	23.4			
	Germany	10.6			
	Other Germanic	36.5			
Scandinavian	Denmark	2.7			
	Sweden	8.6			
	Norway	3.3			
	Ireland	11.3			
All other Foreign		7.6			
United States		11.6			

Fig. 5.—Diagram 1. Nationality of mothers and deaths from diarrheal diseases.

have a tabulation made of all children under 5 years of age by wards and nationality of mothers. I predict that these figures will prove of the utmost value to the students of all questions concerning the welfare of children in this city. It is only by the aid of these figures that I can give you the percentages desired.

Note that the death-rate of children of all foreign mothers is nearly double that of children of American mothers, but the rates differ widely among the children of mothers from various countries.

Another study of infant mortality—the Relation of Diarrheal Deaths to Temperature—is illustrated by Figure 6, Diagram 2. In these the

The Relation of Temperature to Deaths from Diarrheal Diseases.

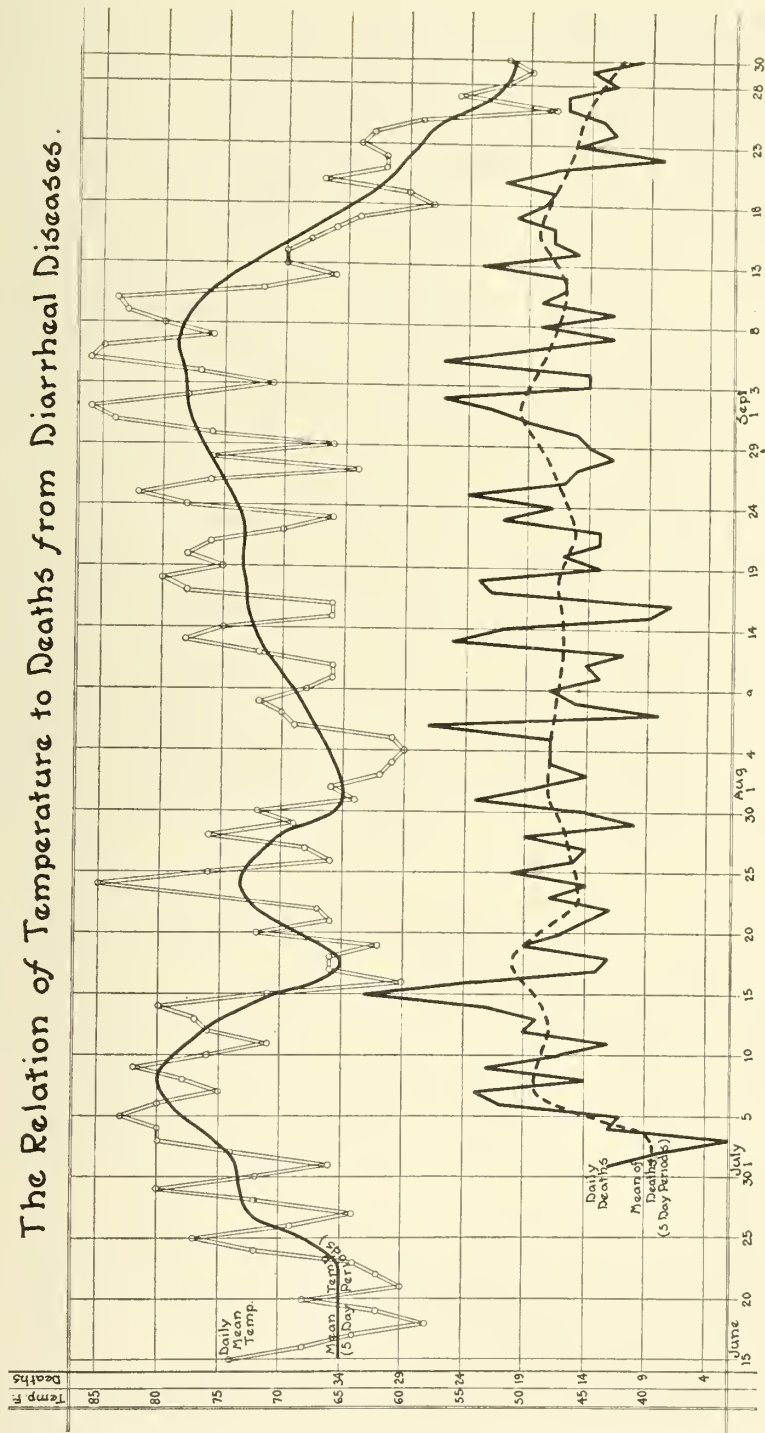


Fig. 6.—Diagram 2 The relation of temperature to deaths from diarrheal diseases.

deaths of children under 2 years of age in the summer months of 1912 are plotted day by day, as is also the daily mean temperature as recorded by the local forecaster of the United State Weather Bureau. I then averaged the temperature in five-day periods and drew a smoothed histogram through the averages. The death figures are treated similarly, giving a similar curved line, which shows an uncanny parallel between the curves for temperature and deaths, the rises in deaths following those in temperature at intervals of about ten days. This is the true "deadly parallel."

Another subject that is only demonstrable by means of statistics, is the question of birth-rates. It is obvious that our reported births are so incomplete that no idea can be obtained from them as to our real or actual birth-rate. After considerable study of this problem and several tentative efforts to solve it, I have evolved the following approximation to its solution, and commend it to your consideration.

What are the elements involved in estimating the birth-rate? Evidently, the number under 1 year old enumerated (or living) at the time of the census, plus the number born in the preceding year and dying before the census. This latter number could also be enumerated by checking up the death certificates, but as that is an enormous undertaking, I have taken the total deaths under one year during the twelve months preceding the actual date of the census. This would be exactly correct if the deaths of children born in the preceding year and dying in the census year equalled those born in the census year that died during the following year. I think this is near enough to use as a working hypothesis. On this basis our birth-rate in 1890 was 33.1 per thousand population; in 1900, 26.4, and in 1910, 25.3. The death-rate of infants under 1 year of age on the same basis was 173.6 per thousand infants in 1890; 138.8 in 1900, and 130.3 in 1910.

TABLE 2

	June 1, 1890	June 1, 1900	Apr. 15, 1910	Jan. 1- Sept. 30, '11	Jan. 1- Sept. 30, '12
T. Pop. U. S. C. . . .	1,099,850	1,698,575	2,185,283	2,244,835	2,294,120
T. Pop. under 1 yr. . .	30,104	39,375	49,073	.....	.....
Deaths under 1 yr. . .	6,326	5,469	6,395	.....	.....
T. births	36,430	44,844	55,468	56,548	57,579
Births per 1,000 pop. .	33.1	26.4	25.3	25.2*	*25.1
Death rate per 1,000 under 1 year	173.6	138.8	130.3	.....	.....
Births reported '90 . .	20,973	29,568	24,000*	21,648†	31,346
			25,651‡	26,835§	39,182
Per cent. reported . .	57.5	65.9	43.2	47.4	68.0

*Estimate.

†Cook County.

‡Nine months.

§Estimate 1 year.

Note the rapid drop both in birth- and death-rates from 1890 to 1900 and the moderate drop in death-rate with almost stationary birth-rate during the latter decennium.

To get at the true significance of this stationary birth-rate I tabulated over 3,000 birth certificates. This work was done before I had the promise of the tabulation by Mr. Bodine, and it will be interesting to compare the

figures from the different sources. Figure 7. Diagram 3 shows that 44 per cent. of the mothers were American born, and they had only 36.2 per cent. of the children. I counted all the children as reported "total living." Of the children reported dead, the American mothers had only 30.6 per cent. I cannot go into all the details of this table and of other tables (unpublished), which give the facts as to number of children born to each mother and the distribution by wards.

The comparative birth- and death-rates among the children of mothers of different nationalities are highly significant. I am inclined to believe that our favorable birth-rate is due more to our foreign-born women than to the women of American antecedents.

As a registration city, Chicago is fortunate in securing a practically perfect count of deaths, owing to the enforcement of the law requiring a burial permit, which must be preceded by a death certificate, either from a physician or the coroner. The question of birth reporting is much more

DATA COMPILED FROM 3067 BIRTH CERTIFICATES

		Percentage of Mothers.	
American Mothers	-1349		44
Total Foreign	" -1718		56
Slav	" -727		23.7
Latin	" -120		3.9
Germanic	" -450		14.7
Scandinavian	" -152		4.9
Irish	" -101		3.3
Other Foreign	" -168		5.5
Total Mothers	-3067		

		Died	Percentage died of total born.	Percentage of Children born.
Children born to American Mothers	-1341	360	11.4	36.2
Total Foreign	" -5529	817	14.7	63.8
Slav	" -2373	362	15.2	27.4
Latin	" -411	52	12.6	4.7
Germanic	" -1574	245	15.5	18.2
Scandinavian	" -374	47	12.5	4.3
Irish	" -348	54	15.5	4.0
Other Foreign	" -449	57	12.6	5.2
Total Children	-8670			

Fig. 7.—Diagram 3. Data compiled from 3,067 birth certificates.

difficult. It does not seem possible to devise a check on reports of births as efficient as the burial permit is on reports of deaths. But complete reports of births are more important than death reports for the efficient child welfare work that promises to reduce wonderfully the infant mortality.

The late Dr. Frank W. Reilly,⁵ in his lucid style, expressed the need for accurate birth registration as follows:

There is hardly a relation in life from the cradle to the grave in which such a record may not prove to be of the greatest value. For example, in the matter of descent: in the relations of guardians and wards: in disabilities of minors: in the administration of estates: the settlement of insurance and pensions: the requirements of foreign countries concerning residence, marriage and legacies: in marriage in our own country: in voting and in jury and in militia service: in the right to admission and practice in the professions and many public offices: in the enforcement of laws relating to education and to child labor, as well as to various

5. Annual Report, Chicago Department of Health, 1894, p. 50.

matters in the Criminal Code,—the irresponsibility of children under ten for crime or misdemeanor, the determination of the "age of consent," etc. As the country becomes more densely settled and the struggle for existence sharper, many of these matters, which have hitherto been of minor significance, will take on a deeper meaning and acquire greater importance.

NOTE.—Dr. Arthur R. Reynolds has recently confirmed the authorship of the address on "Needed Sanitary Legislation," from which the quotation is taken in his biography of Dr. Reilly. *Bulletin Soc. of Med. Hist. of Chicago*, August, 1912, p. 121.

TABLE 3.—BIRTHS REPORTED TO COOK COUNTY CLERK

	1911 Totals	1912 Physicians Not Paid	1912 Midwives Not Paid
January	2,370	1,340	769
February	2,162	1,308	592
March (Began Pay March 9) ..	2,341	1,328	623
April	2,088	1,100	513
May	2,271	1,415	570
June	2,277	1,564	609
July	2,531	.....	...
August	2,612	.....	...
September	2,816	.....	...
	21,468	12,342	5,639

Totals for 1912, estimated, 31,346.

Physicians were paid for 5,186 certificates.

Midwives were paid for 8,179 certificates.

Total increase, 9,878 or 46 per cent. (for 9 months).

(Figures for unpaid reports, July-September, 1912, estimated.)

Some of you may remember that I brought up this subject of reporting births two years ago and again one year ago, in connection with an effort to have the County Board appropriate money to pay the fee under the State law. The present Board did appropriate \$5,000, and I have checked up the reports on file in the office of the County Clerk. As I was unable, for lack of time, to do all this work personally, I employed an assistant who counted all the unpaid certificates received from January to June, inclusive. Physicians had reported 8,055, and midwives 3,676 births for which they had not asked to be paid. Physicians had collected for 2,894, and midwives for 4,769 certificates. These figures make a total of 19,349, an increase of 9,878, or 46 per cent., over the same months in 1911. But there was a large increase in the registration of births the latter part of 1911, so that the total increase in 1912, due to paying the fee, is in the neighborhood of 30 per cent. over the figures for 1911. The total certificates paid for up to October 24, was 6,078 to physicians, and 9,170 to midwives.

These returns show three facts clearly: first, that the truculent letter of County Clerk Sweitzer, as published in the *Bulletin* of this Society, Sept. 30, 1911, bluffed the physicians into sending in a lot of certificates; second, that the midwives are better collectors than the physicians. I fear that some of them put in fake bills and believe that an investigation is in order. Third, and most important, it proves that paying for certificates without enforcing the law will bring in only about 75 per cent. of the births. I advocated paying the fee to give the present law a fair trial. The fatal defect in our law is the lack of any official charged with

its enforcement. There may be other fatal defects, but what's the use. One fatal defect is enough.

That there can be no doubt on this point, I quote from a letter written to me by Dr. J. A. Egan, dated Sept. 7, 1910:

No effort has been made by the State Board of Health to enforce the law regarding the payment of births, for this matter does not come under the jurisdiction of the Board.

And the following letter to me from Dr. C. C. Ellis, Registrar of Vital Statistics, State Board of Health, Springfield, dated Oct. 18, 1910:

It is impossible for me to supply you with the information you request in your letter to Dr. Egan, dated October 4, as the total births and deaths in Illinois cannot be estimated.

You will find attached, however, figures showing the number of deaths and births which have been recorded in this office for 1909. The figures for 1908 are also shown.

I have here the first voucher issued by Cook County for the recording of a birth. It was a twin birth.

Birth Record Fund

OFFICE OF
County Clerk of Cook County
STATE OF ILLINOIS

Birth Record Appropriation

To the County Treasurer of Cook County:

This is to Certify that H. G. Ohls M.D.

has made 2 reports of births to the County Clerk of Cook County covering 2 births which occurred during the month of February A. D. 1912

and is entitled to the sum of Twenty Dollars and Fifty Cents, out of the funds in the Cook County Treasury appropriated for that purpose, all of which appears from the records and files in my office

Approved Robert M. Johnston MAR 9 1912

Witness my hand and official seal this 9th day of March A. D. 1912

Robert M. Johnston
County Clerk of Cook County

DECEMBER'S SIGNATURE AND ADDRESS

Fig. 8.—First voucher issued by Cook County.

I have tried to show some of the difficulties of doing statistical work as an aid to public health administration and to demonstrate how dependent all such work is on the basic records of deaths and births. I take it that the registration states have the most efficient laws, or at least, have had them in operation long enough to get the best results.

In September last I addressed a circular letter to the officials in charge of registration in each of the registration states asking for a copy of the law and his judgment of the practical working of the law and whether he would suggest any modification to secure more complete returns.

I have answers from twenty-two out of the twenty-four. Most of the officials were satisfied with their laws.

W. E. Crampton, Missouri State Statistician,⁶ wrote: "The Missouri Vital Statistics Law has been called the 'Model Law,' and we have no corrections to make. The success of the law, as you know, depends upon those who have its enforcement in charge. We believe better results

6. Letter, Sept. 24, 1912.

would be secured if a compensation were allowed subregisters. As the law now stands, they receive nothing for their work, and are not even supplied with postage."

State	Law	Pay	Death Rate	Birth Rate	Authority	Time Limit
Cal.	'05	..	1911 13.7	1911 16.0	9/23/12 L. V. Boyle, Jr., Dept. Stat.	10 d.
Colo.	'07	..	13.1	.....	11/1/12 Paul S. Hunter, Sec.	10 d.
Conn.	'05	..	15.4	24.8	9/24/12 J. H. Townsend, Sec.	Before 7 prox.
D. C.	'09	..	17.8	19.9	9/25/12 J. L. Norris, Act. H. Off.	6 d.
Ind.	'07	..	13.0	21.0	10/4/12 J. N. Hurty, Sec.	36 hrs.
Ky.	'12	25	..... 1908	..... 1908	.....	10 d.
Maine	'09	25	16.05	22.25	Reg. Rpt. '08 9/25/12	6 d.
Md.	7/1/12	..	15.8 1910	15.18 1910	F. V. Beitler, Chief B. of V. S. 9/23/12	4 d. 48 hrs. &
Mass.	3/21/12	25	16.3	25.71 24.5 08	A. P. Langtry, Sec. 9/20/12	15 d.
Mich.	'05	50	13.1	20.7	F. C. Martindale, Sec. of State 9/23/12	10 d.
Minn.	'07	..	10.9	21.7	H. M. Bracken, Sec. 9/24/12	10 d.
Mo.	'10	..	13.7 6/30/10	22.42 6/30/10	W. E. Crampton, Statistician 10/2/12	10 d.
Mont.	'07	15	10.38	6.6	T. D. Tuttle, Sec.	10 d.
N. H.	'11	..	17.13 1910	20.79	Irving A. Watson, Reg. 9/23/12	6 d.
N. J.	'09	..	15.57	21.26	David S. South, State Reg. 9/25/12	5 d.
N. Y.	'12	..	15.5 Towns	23.6 not	Eugene H. Porter, Sec. 9/24/12	36 hrs.
N. C.	'11	..	18.4 1910	registered	Mabel Massey, Clk. 9/30/12 and 10/18	.....
Ohio	'08	..	13.76	21.3	A. C. Holland, State Reg. 9/25/12	10 d.
Pa.	'07	..	14.2 1909	26.5	Wilbur R. Batt, State Reg. 10/3/12	10 d.
R. Is.	'11	25	15.6	24.2	Gardiner T. Swarts, Sec. 9/24/12	5th prox.
Utah	'05	..	10.7 1909	31.2	T. B. Beatty, State Statist. 9/23/12	10 d.
Vt.	'11	25	15.7 1909	22.2	Henry D. Holton, Sec.	10 d.
Wash.	'07	..	9.8	.....	..... 9/26/12	10 d.
Wis.	'09	25	12.0	22.8	L. W. Hutchcraft, Statis.	5 d.

In a previous letter, Dr. Frank B. Hiller, Secretary Missouri State Board of Health,⁷ attributed the success of the Missouri law to the fact that it could be enforced under penalty. Another factor in their success was the appointment of nearly 1,000 local registrars, all of whom, except twenty-five, were physicians of high standing. Their position as men of

7. Letter, May 25 '910.

the medical fraternity caused them to take a deep interest in the administration of the law.

Dr. Eugene H. Porter, Commissioner New York State Department of Health,⁸ wrote: "If a law could be passed giving the State Commissioner of Health power to appoint the local registrars and to have immediate supervision over their work and the prosecution of violations placed in the hands of the Department instead of local Boards of Health, I am sure that the registration in this state would be made as nearly complete as possible."

Dr. W. S. Rankin, Secretary of the North Carolina State Board of Health, by his clerk, Miss Massey,⁹ wrote: "We hope the next General Assembly, convening in January, 1913, will amend this law in many instances—among other things, give us state-wide registration. So far we have made no effort to procure the registration of births."

Wm. R. Batt, Pennsylvania State Registrar,¹⁰ wrote: "The practical working of the law in this state has been very satisfactory. The modification I would suggest would be that which would adjust it to the conditions of administration existing in the various civil divisions of the several states."

Dr. Gardner T. Swarts, Secretary Rhode Island State Board of Health,¹¹ wrote: "The only addition which I would make to the law would be to have more stringent requirements for the immediate report of births, say within twenty-four hours. . . . In addition to this it would be of some advantage if a report could be made by the recorders or clerks of the parochial or church schools, or churches where is kept a copy of the christenings."

The requirements of the various laws as set forth in Table 5, show that Indiana and New York require births to be reported within thirty-six hours. In Massachusetts a brief notice must be filed within forty-eight hours, and a complete certificate within fifteen days, but if the latter is sent within forty-eight hours, the brief notice may be omitted.

All the other states require the certificate in from four to ten days, except Rhode Island, which requires it on or before the fifth prox., and Connecticut on or before the seventh prox.

Montana pays 15 cents for birth certificates, Michigan 50 cents, and six other states 25 cents. Of the four model law states, Pennsylvania, Ohio, Missouri and Kentucky, the latter is the only one which pays for certificates. There the County Treasurer pays 25 cents to physicians, midwives and local registrars for each birth and death certificate properly made out and registered, on certification by the State Registrar.

Now as to the remedy. Illinois is too great a state in intelligence and material wealth to rest much longer under the stigma that men may be born, live to mature years and die, in certain counties, without any legal record of their existence. That will do for darkest Africa, but it won't go much longer here.

8. Letter, Sept. 25, 1912.

9. Letter, Sept. 24, 1912.

10. Letter, Sept. 25, 1912.

11. Letter, Oct. 3, 1912.

Whether we shall have the model law or go back to the English system, which, since the Act of 1836, has required the *parents* to "give notice to the registrar of its birth," or require the physician to send a brief card notice only and secure the details from the parents—all of these law-points I leave for the consideration of the eminent gentlemen who will lead the discussion.

I wish to express my obligations to Dr. Young for permission to use Health Department maps and materials; to Dr. Drake for the use of his moving picture and for invaluable suggestions in the matter of text and diagrams; to Dr. Cressy L. Wilbur for the registration map and advice; to the Board of Education for the machine; to Mr. Bodine for statistics, and to Professor Kent, who will manipulate the movies.

SCENARIO OF THE ERROR OF OMISSION¹²

TITLE—"THE ERROR OF OMISSION."

Scene 1.—Living-room adjoining bedroom. Husband anxiously awaiting word from within. Doctor enters from bedroom and smilingly advises father "It's a boy." Husband enters bedroom and returning finds doctor signing birth certificate ("I. M. Rush, M.D."). Doctor indicates he is too busy to attend to recording birth certificate and asks father to do it. Doctor leaves.

A CONTRAST IN BIRTH REGISTRATION

Scenes from "The Error of Omission"

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DOG REGISTRY OFFICE



BABY REGISTRY OFFICE

Figs. 9 and 10.—Speaking of dogs and babies—many are registered, but few are babies.

Father stands gazing disinterestedly at birth certificate and throws it aside as servant enters with messenger carrying blooded bull-pup. The accompanying note explains that the pup is a gift from a friend and that it should be recorded at the dog registry office at once. Husband delightedly takes pup and rushes out to Dog Registry office.

Scene 2.—Dog registry office. Sports and society women in line awaiting turn to register their pet dogs. Enter our young father with his bull-pup. As he is making out the dog registry papers he meets couple of male acquaintances. They sign the papers as witnesses, after which certificate is recorded.

Scene 3.—Birth registry office. General air of nothing doing, although sign on wall says "Law requires registration of births within twenty-four hours." Clerks idly chatting and yawning. Enter young father and his two male friends. Searches

12. Drake, C. St. Clair: The Bulletin of Chicago Department of Health, Oct. 5, 1912.

pocket for baby's birth certificate and, failing to find it, remarks: "Oh never mind; some other time will do."

Scene 4.—Same room as in Scene 1. Enter father with his bull-pup and two male friends. Nurse brings baby in; friends admire; attention is called to birth-mark on baby's neck. Nurse and baby retire. Father and friends drink to baby's health and friends then leave. Husband hands servant the bull-pup with instructions to be very careful with it. He then sits down, lights cigar, sees birth certificate on table, picks it up, yawns as he reads it, gives evidence of his disapproval of such "official nonsense," tears the certificate up and assigns to waste-basket. He now remembers the dog certificate, which he takes out of his packet and examines with evident pleasure. Carefully folding it, he writes on back: "Became father of a fine, bouncing boy on this date, also;" then files it away with other valuable papers.

SIX YEARS LATER

The School Age

Scene 5.—School principal's office. The child's first day at school. Enter servant with our baby, "Tommy." Principal questions servant, who cannot give proper information. Principal sends servant and child home, with note:

"To Parents: All children must present a properly registered birth certificate on seeking admission to school. Kindly observe this requirement before again sending your child to this school."

(Signed), Principal

Scene 6.—Room in parents' home. Enter servant with child; hands principal's note to parents. Father indignantly takes child back to school.

Scene 7.—School principal's office. Enter father with Tommy; demands that child be admitted to school; principal attempts to explain; father becomes more insistent and finally principal consents, calls for admission card, writes name of child and date of admission thereon and in the space for age writes "Birth record not obtainable," this constituting a stain upon the child's record.

THE FATHER'S DEATH MAKES IT NECESSARY FOR TOMMY TO SEEK WORK AT THE AGE OF 14—BUT THE TRUANT OFFICER INTERVENES

Scene 8.—Employment office. Boys seen seeking work. Tommy enters looking young for his years. Truant officer enters and questions boys. All but Tommy show birth certificates, establishing their ages. Officer compels Tommy to take him to his mother.

Scene 9.—Plain living-room; mother, pale and careworn, at sewing machine. Enter Tommy and truant officer. Officer announces: "Unless you can produce a birth certificate proving your son's age he must return to school." Mother, unable to produce the required certificate, pleads with officer, but he is firm. Officer leaves. Tommy tries to comfort weeping mother.

THE AGE OF LOVE AND POLITICS

Scene 10.—Porch of home of Tommy's sweetheart. Tommy, now 21, is seen with his fiancée, the daughter of a congressman, who is seeking reelection. Enter congressman, conversation ensuing. Congressman tells Tommy of the political situation and asks him to register that he may vote for him. Tommy agrees and leaves for the registration place.

CANNOT VOTE BECAUSE CANNOT ESTABLISH AGE

Scene 11.—Polling place, voters registering. Enter Tommy; applies for registration; age is questioned; clerk asks for birth certificate; none being forthcoming, registration is refused and Tommy is ejected while attempting to explain.

REFUSED A MARRIAGE LICENSE

Scene 12.—Marriage license bureau. Enter Tom, his fiancée and her father; Tom applies for marriage license; clerk notices youthful appearance and asks for

his birth certificate to prove legal age. Unable to produce the certificate, marriage license is refused. Tom and his fiancé leave, much dejected; father of fiancé, doubtful of the boy's record, advises Tom to wait a few years.

AN INHERITANCE ALMOST LOST

Scene 13.—Tom's apartment— a few weeks later. Enter Tom, heartbroken. Seated at table in reflective mood, he opens mail; finds one letter reading:

Dear Sir: By the will of an uncle, the late Thomas Jones of London, England, you inherit \$50,000. Kindly call *with your birth certificate* and other papers which will establish your right to this inheritance.

Yours truly,

Warren L. Scott.

Attorney-at-Law.

Tom is first elated, but he notes the "birth certificate" requirement, and, knowing he has none, he despairingly throws the letter aside. In his despair he decides to once more search the old family records. He fails to find any record of his birth, but he does find the dog registry certificate, and his reflection upon this evidence of paternal solicitude for a bull-pup and the lack of it for a son are readily apparent. As he is refolding the dog registry certificate his eye catches the notation on the back: "Became father of a fine, bouncing boy on this date, also." He now hastily leaves for the home of his fiancé.

Scene 14.—Porch of sweetheart's home. Father seated, reading; Tom rushes up, shows the paper to father, and as they are examining it, noting the witnesses' names attached to the paper, fiancé comes out, prepared for walk. Explanations and all are happy. They all leave to hunt up the witnesses.

Scene 15.—Office of Smith & Brown, attorneys. Tom, his fiancé and her father enter, explain their mission, show dog certificate; both Smith and Brown acknowledge their signatures attached to dog certificate as witnesses; remember seeing Tom when few hours old and noting birthmark on baby's neck. When now shown this mark of identification they make the required affidavits and things begin to adjust themselves for the usual happy ending.

TWO YEARS LATER

Profiting by Experience

Scene 16.—Library adjoining bed chamber. Tom pacing up and down room; congressman shifting uneasily in chair. Nurse comes out and whispers "It's a boy." Father and grandfather (congressman) tip-toe into room. Doctor comes out, followed by Tom. Tom asks about birth certificate for his baby; doctor gets one out of his grip, they fill it out and in great haste Tom rushes off to the birth registry office to have it recorded.

927 Lawrence Avenue.

DISCUSSION

Dr. George W. Webster (president of the State Board of Health): Dr. Ohls speaks of the system of classification to be adopted, and mentions the English system. The question of the *best system* is no longer a question for controversy or discussion, as I showed in a report made to the Chicago Medical Society in December, 1905.

Let us glance briefly at the history of this movement in the United States, its present status, the advantages of registration, and our duty in the matter.

Historical: That vital statistics are the basis on which all State and Municipal sanitation rests, was early recognized by the Colonies. For example, as early as 1631, Virginia required that ministers and church wardens should report marriages, births and deaths. In 1639, the Colony of Massachusetts adopted registration regulations, and in 1646 the Plymouth Colony followed its example. Some of the municipalities required reports of vital statistics.

The census of the United States was primarily constituted for the purpose of making a decennial enumeration of the population so that the representation of

the various states in the lower house of Congress might be apportioned properly, the first census being taken in 1790, and at each decennial period since that time.

As a correct enumeration of the population, at sufficiently frequent intervals, is absolutely essential to the proper presentation of vital statistics, the constitutional provision that the people should be counted every ten years may be considered to have laid a part of the foundation of vital statistics, and therefore of preventive medicine in the United States. But it was not sufficient to merely enumerate the population at regular intervals, and, at an early date, the importance of vital statistics was realized, and an effort made to secure these statistics in connection with the other census inquiries. England began a comprehensive series of "Annual Reports of the Registrar General of Births, Deaths and Marriages," in 1837, *from which period dates the beginning of modern sanitation*. Other countries soon followed the example of England with the result that at the present time there is scarcely a civilized nation on the globe but possesses a complete official registry of the vital events of its people, *with the exception of the United States*. This movement, as I have already stated, had been anticipated by the Colonies and was now felt in the United States. The first annual report of the Secretary of the Commonwealth to the Legislature, under the Act of March, 1842, relating to the registry and returns of births, marriages and deaths in Massachusetts, was published in 1843, and the annual volumes have been continued regularly down to the present time. Other states attempted to follow the example of Massachusetts, New York, in 1847, New Jersey in 1848, Connecticut 1848, New Hampshire 1849, Pennsylvania in 1851, Kentucky in 1852.

Beginning with the seventh census in 1850 an effort was made to collect statistics of death through the enumeration of the population, as a part of the general census. This method was unsuccessful in giving reliable results; vital statistics *cannot be obtained by enumeration*, but only by *immediate registration*. But the plan was pursued at each subsequent census until the thirteenth (1910), when it was abandoned.

We thus see that sixty years ago the movement looking toward the registration of vital statistics in the United States was in a somewhat hopeful condition; but, unfortunately, the results were disappointing, the laws were mostly failures; in some states, as New York for example, total failures. In 1880 the results of the registration of deaths under state and municipal authority were utilized, thus establishing the beginning of the registration area in the United States, this registration area consisting of Massachusetts, New Jersey and the District of Columbia. To this were added certain cities known as *registration cities*, although they were in non-registration states. This *area* at that time represented 17 per cent. of the total population of the continental United States.

Of course it is understood by all that the *registration* of births and deaths is a state or a municipal function and is an exercise of the police power, and not under the control of the Federal Government, because the Government of the United States under the limitations of the Constitution has no authority to conduct such work directly, all such reports of the Census Bureau being based on transcripts of state and municipal records, the government conducting the Bureau of the Census in which a system of decennial enumeration is employed, the bureau compiling the returns made by the States.

The importance of this as a State duty was recognized, and voiced by Dr. Elisha Harris at the fifth annual meeting of the American Public Health Association at Chicago in 1877. He said: "Before the national census of 1880 is commenced, all the states ought to have a good system of vital statistics organized and in harmonious operation, contributing comparable and numerically complete results

"Another decade of neglect to adopt an effectual system of registration in the United States would be greatly to the discredit of the intelligence and public spirit of American citizens."

An epoch-making step in international vital statistics was taken at the International Statistical Institute, which met in Chicago in 1893, when Dr. Jaques

Bertillon, as chairman of a committee appointed for that purpose, reported a system of classification of causes of death. This classification was favored by formal resolution of the American Public Health Association, in 1897, and adopted in 1898, and a plan proposed for its decennial revision, the first to be made in 1900, under the auspices of the International Congress of Hygiene and Demography. The International Conference of State and Provincial Boards of Health recommended it in 1898, and the International Statistical Institute approved it in 1899.

In August, 1900, the International Revision Commission met in Paris under the auspices of the International Congress of Hygiene and Demography, and in response to an invitation of the French government. Representatives of twenty-six of the leading countries of the world participated in the conference, the United States being represented in it by the Public Health Service.

The classification hitherto known as the Bertillon system of classification, and since known as the International System, was adopted by the twenty-six countries sending representatives, and by the United States for the Bureau of the Census and the Bureau of Labor. It has since been adopted by all the registration States, and by all registration cities in the United States; by Chicago, only while Dr. Evans was Commissioner of Health. (See page 22 of my report.) Its chief advantages are that it is international in scope, provides for decennial revision, and because of its adaptability and comparability and, above all, uniformity.

As already stated, two states, Massachusetts, New Jersey and the District of Columbia had laws, and returns under them, of such character as to permit their returns of deaths to be accepted by the Census Bureau, these states, together with certain municipalities constituting the "registration area" at that time, and representing about 17 per cent. of the population of the United States.

The progress from that time on is briefly sketched as follows, in a recent booklet sent out by the Census Bureau:

"For 1890 there were added the states of Connecticut, *Delaware* (not entitled to admission and dropped at the next Census), New Hampshire, New York, Rhode Island, and Vermont, which increased the percentage to 31.4.

For the census year 1900 (ending June 1), there were added Maine and Michigan, raising the percentage to 37.9.

The compilations heretofore were made only for census years, there being no data for the intercensal period. Beginning with the *calendar* year 1900, and since the establishment of the Bureau of the Census upon a permanent basis, there have been regular annual reports (Mortality Statistics, 1900 to 1909) and large additions to the registration area due to the constant efforts made by the Bureau, in cooperation with medical and sanitary organizations and with state authorities.

Indiana was added for the calendar year 1900.

California, Colorado, Maryland, Pennsylvania, and South Dakota were added for 1906; Washington and Wisconsin were added for 1908; and Ohio for 1909. The aggregate estimated population for the last year was 48,776,893, or 55.3 per cent. of the total estimated population of continental United States. The vast number of 732,538 deaths was returned for the latter year, so that although the United States does not possess a complete system of death registration, it does possess returns of great value from the eighteen registration states, District of Columbia, and 54 registration cities in non-registration states now constituting the registration area.

For 1910 returns were also received from certain states that may prove eligible for admission, namely, Delaware, Minnesota, Montana, Nebraska, North Carolina (municipalities), North Dakota, Oregon and Utah.

Other states have adopted laws in conformity to the essential principles of successful registration and the model law based thereon, namely, Missouri (in effect Feb. 1, 1910) and Kentucky (in effect Jan. 1, 1911). There is widespread interest in the South, which has heretofore been entirely unrepresented by reliable state registration—to its large sanitary and financial loss, "because vague rumors of high mortality can only be confuted by accurate registration of deaths."

The next great forward step was taken when the United States Standard Certificate of Death was adopted, with a corresponding certificate for births. The standard certificate for deaths was adopted in 1902, at a time when no two States and few cities in this country used identical forms for the initial schedule, upon which the exact comparability of all subsequent data must depend. The progress of the standard certificate since that time may be seen in the accompanying map. The certificate was thoroughly revised at the meeting of the organized registration officials of the United States, constituting the Section on Vital Statistics of the American Public Health Association, Richmond, 1909, and went into effect on Jan. 1, 1910. It contains provision for the more precise statement of age of infants dying very soon after births, thus enabling us to make the sharp distinction necessary between stillbirths and deaths of children born alive; the more definite statement of both industry and specific occupation of decedents; and uniform instructions for the proper statement of occupation and cause of death. At the present time this form of certificate is used by a population of 66,892,389. Provision has been made for its decennial revision. Its universal adoption is clearly demanded, because in no other way is it possible to secure the two chief essentials in vital statistics, namely, *uniformity and comparability of data*.

ILLINOIS

Historical: The history of vital statistics legislation in Illinois is both interesting and instructive. The act to create and establish a State Board of Health for the State of Illinois, approved May 28, 1877, provided for the registration of births and deaths. It became the duty of physicians and accoucheurs to report to the county clerk all births and deaths, coming under their supervision, with a certificate as to the cause of death and such relative facts as the State Board of Health might require in the blank form to be furnished by the Board.

This act was a dead letter at all times in its application to reports of births, and was very laxly enforced in the matter of reports of deaths.

In their annual report to the Governor in 1900, the Illinois State Board of Health recommended the enactment of a law forbidding the interment or cremation of a dead body without a permit from some legally constituted authority; in other words, a law with a compulsory burial permit feature.

Governor Tanner, in his biennial message to the General Assembly in 1901, approved the recommendation of the State Board of Health. Accordingly, a bill providing for the registration of births and deaths, embodying a compulsory burial permit feature, was prepared by the Secretary of the State Board of Health and was introduced in the Senate by Hon. Pleasant P. T. Chapman of Vienna. After encountering some opposition, the bill finally became a law, and went into effect Jan. 1, 1902. The law worked fairly satisfactorily during 1902, although it speedily became apparent to the State Board of Health that all reports of deaths were not being made and the law was not being enforced, especially in counties not under township organization. It was in these counties that the most formidable opposition to the enforcement of the law was found.

In February, 1903, bills were introduced in both the Senate and the House, in the former by the late Senator Burnett, and in the House by the speaker, Mr. Miller, repealing in its entirety the birth and death law of 1901. Further efforts were made by the Board, through its Secretary, to prevent the repeal of the law. Finding that it was impossible to do this, the Secretary made inquiries as to the nature of a bill that would be acceptable to the General Assembly, and was informed that any bill that would eliminate the compulsory burial permit feature in rural districts would be assured of passage. The Secretary, thereupon, drew up a bill which passed the House and Senate without opposition or amendment, and is now the present law providing for the registration of births and deaths.

While this bill of 1903 was under consideration, the Legislative Committee of the Illinois State Medical Society, through its Chairman, made inquiry into the matter and on Feb. 28, 1903, Dr. Black wrote the Secretary as follows, after stating that a member of the Committee had had a long interview with Mr. Miller regarding the matter:

"We think that while it is somewhat of a loss to have the bill divested of the burial permit feature, that it will be the best policy, under the circumstances.

"From the standpoint of vital statistics, if there is a sufficient penalty attached for non-compliance on the part of physicians, it will be all right.

"There seems little doubt that all the opposition of the law emanates from the southern part of the state. I think the members of the Legislature are unduly exercised on account of the fate of a candidate for Congress in the southern part of the state, whose defeat is largely attributed to his having voted for this birth and death bill."

Here it might be pertinently stated that the candidate referred to by Dr. Black was Hon. Pleasant P. T. Chapman of Vienna, who introduced the bill of 1901.

No further attention was given to the matter by the Legislative Committee of the Illinois State Medical Society, although it was stated in the *ILLINOIS MEDICAL JOURNAL* for March, 1903, that "the friends of the law are willing to have the amendments made making it less burdensome, but all steadfastly oppose any more radical change."

The Legislative Committee was chiefly concerned in an attempt to secure the passage of a bill providing for a State Board of Medical Examiners, and no further attention was paid to the efforts made to repeal the law of 1901 or to institute retaliatory measures against the State Board of Health for its too active participation in an endeavor to prevent the repeal of the law.

It may be of interest that Hon. H. R. Fowler, who was a member of the Senate of the Forty-third General Assembly, 1903, and who took such an active part in the repeal of the birth and death act of 1901, had just defeated Hon. Pleasant P. T. Chapman for Congress. It has been said that the bill of 1901 was made an issue, even in this campaign.

The law has many good features, but the fact that it is emasculated by the elimination of the compulsory burial permit feature and that the State Board of Health does not receive reports of all deaths, leaves Illinois out of the registration area. It was a compromise measure, it was this or nothing, but it was the best that we could do at the time. Meanwhile other states were busy, other agencies were becoming interested and active, and the Census Bureau, especially through the chief statistician, Dr. Cressy L. Wilbur, was carrying on a much needed aggressive campaign of education, and in cooperation with the other agencies spoken of, especially the vital statistics section of the American Public Health Association, the Legislative Committee of the American Medical Association, drew up a model births and deaths law, with modifications to suit the different local conditions, and urged its passage by states not in the registration area.

In 1909 such a model law was introduced in both the Senate and the House, but failed to become a law, owing to the opposition from legislators, especially in the southern part of the State.

In order to do all in our power to secure for Illinois this much needed law, on Dec. 9, 1910, a conference was held at the office of the President of the State Board of Health at Chicago. This conference was attended by Dr. Cressy L. Wilbur, Chief Statistician of the Census Bureau, Dr. Wm. A. Evans, Commissioner of Health, Chicago; Dr. M. O. Heckard, of the same department; Dr. F. R. Green, from the American Medical Association; Mr. E. R. Wright, President of the State Federation of Labor; Prof. Chas. R. Henderson, of the Chicago University, and representing the Society for the Study and Prevention of Infant Mortality, and the president of the State Board of Health. Dr. Geo. W. Webster was elected chairman, and Dr. Chas. J. Whalen secretary of the committee.

A resolution was adopted, appointing a subcommittee which was instructed to invite the cooperation of the Bar Association and to "draft a bill regulating the registration of births and deaths in Illinois, such draft to formulate the essential features of the model law approved by the American Medical Association, and the United States Census Bureau, and to report back to the committee."

With the cooperation and assistance of the Chicago Bar Association a bill was drawn up by the committee and introduced at the last session of the General

Assembly, but failed to pass. Such a law is recommended by Governor Deneen in his biennial message, read in the Senate January, 1911.

It has been urged that owing to the sparsely settled condition of parts of Illinois, the enforcement of such a law is not practicable. It is not necessary here to go to Japan or Chili or Finland or Ceylon to make comparisons. Just across the border to the east of us in Indiana and Michigan, and across the river in Missouri, such laws are in satisfactory, successful operation.

CONCLUSION

It is the duty of the State of Illinois to see to it that at least the three principal events in the life of each of its citizens be made a matter of public record. These three principal events are birth, marriage and death. Illinois has spent forty millions of dollars on a Sanitary Canal, largely for the purpose of improving the water supply of some of her cities and chiefly for the purpose of diminishing the deaths from typhoid fever. To what extent has the typhoid death rate of the state as a whole been affected? Nobody knows. We do know that in the city of Chicago, having accurate, complete death reports, that the death rate from typhoid diminished from 173 in 100,000 in 1891 to 15.6 per 100,000 in 1908.

Owing to the lack of an adequate system of sanitary book keeping, we don't know the actual annual death rates in the state, from typhoid fever, or any other disease, either before the canal was opened, or afterward.

What would you think of the business sagacity of a corporation that would spend forty millions of dollars on some improvement and then fail to keep a set of books that would enable it to know whether it was a paying investment or not?

For several years the State has been engaged in a State wide antituberculosis crusade. And with what result? Nobody knows. We do not know the exact death rate from this disease and consequently we are not in a position to correctly estimate the value of any or of all the methods instituted for its suppression.

The State Geologic Survey and the State Water Survey have done a splendid service for the State in showing the need of a better water supply and how to obtain it. What effect has it had upon the typhoid or other mortality? Nobody knows.

In Illinois the birth or the death of a blooded horse or a Jersey bull is at once recorded in a herd book, but the people of southern Illinois, through the voice of their chosen representatives, have gone on record as saying that it is too much trouble to obtain legal permission to bury their dead or to make a legal record of the event, and, consequently, in this state, outside of cities having ordinances with a compulsory burial permit feature, a human being may be placed underground without the slightest legal note or record. What a disgrace to our state that we should be found holding open the door for graveyard insurance. When a human being can pass, or be sent from this world to the next, without a single formality, inquiry into or record of the cause of the death, and the body buried like a dog, it is time we enacted and enforced a suitable law, if for no other reason, as a deterrent of crime.

The purpose of this movement for the extension of the registration area is to increase the number of registration states until the entire United States shall be represented by satisfactory, accurate, complete returns of births and deaths, and American vital statistics shall be entitled to rank with those of other civilized nations of the world.

The time is opportune. On this point Dr. Cressy L. Wilbur says: "There has never been greater harmony or a more sincere desire for helpful cooperation between the Federal, State, and Municipal registration offices, nor a more happy prospect for the coming of the time when vital statistics shall be recognized, in fact as well as in theory, as the absolutely necessary foundation of modern scientific public health service."

Illinois should not be slow to assume among the other registration states that station to which she is entitled by virtue of her geographical situation, her commercial, intellectual and public health supremacy.

Good laws are the expression of an enlightened public sentiment enacted for the protection of society as a whole, and not for any class, and another failure to enact a satisfactory births and deaths law in Illinois will be greatly to the discredit of the intelligence and public spirit of the people of the state.

It is time that Illinois ceases to allow politics to interfere with her duties, and with the business sagacity, foresight, common sense and patriotism which have characterized her legislative acts in the past, enact and enforce such a vital statistics law, which will, I am sure, ultimately pay immense dividends as a part of the State Public Health Service.

Practical success in our neighboring states has pointed the way, and we should not be slow to follow it. Let us emulate the example of Pennsylvania, a state having one of the poorest registration laws in the United States in 1905, and now, one of the best.

Finally, for sanitary, legal, social, economic reasons, Illinois should prepare and enact, and then enforce, such a births and deaths law as will enable her to take her proper place among, not only foreign countries, but her immediate neighbors in the registration area, to the end that sanitary science be advanced, preventive medicine be improved, the legal rights of every citizen be better protected, a proper foundation be laid for the working out of many social problems of vital importance, the health of every citizen be better protected and life prolonged.

DR. CHARLES J. WHALEN*: Without accurate statistics of population, mortality and the causes of death, the efficiency or inefficiency of public health measures cannot be determined. Correct mortality statistics are fundamental to a progressive public health administration. Without reliable statistics of mortality based on the immediate registration of all deaths as they occur it would be as unsatisfactory to attempt to conduct a public health service either of city, State or Nation as it would be to manage a large business enterprise without some adequate system of book keeping. To know the influence of modern methods of sanitation and prevention of disease on the general health of the community, these statistics of death must be accurately known. The guardian of the public health must be ever on the alert to note the movement of mortality from important diseases. In this way only can he judge his success in restricting the same.

Reliable records of births are of almost as much importance as are those of deaths. The State owes it to the individual that an accurate record should be made of his birth and his death.

Nearly every State in the country has attempted to establish a satisfactory system of recording vital statistics; up to the present time less than half have adequate laws for the registration of deaths alone. It is my belief that there is not a single State, and probably not even a single city in the United States that has to-day a complete registration of births.

The movement to secure a satisfactory law in Illinois should receive the attention and active support of every physician in the State. Some members of the profession think it is unjust that we are asked to record births and deaths, and give notice of infectious diseases under our treatment, without pecuniary remuneration. While it may seem hard to have this burden imposed upon us I believe we should cheerfully comply with the requirements until a better condition can be brought about by the proper organization of the medical profession and when this time arrives we can have any ordinance or statute enacted that we may see fit to advocate.

I am a firm believer in accurate vital statistics and from the time I received my license permitting me to practice medicine to the present time I have done my utmost to bring about such a result. In my early practice I did a great deal of obstetrical work for a period of years but never failed to report a birth and that too without any hope of remuneration.

When I became Commissioner of Health of Chicago in 1895 I found an error in the method of computing deaths in this city, there being then in vogue a system of excluding from the total number of deaths all children born who lived less than

* Dr. Whalen was called away before the discussion, but left a memorandum of his views.

24 hours; this method of computing made a difference of approximately 7 per cent. of the total number of deaths of children dying under one year of age. I corrected the error at once.

It was not long afterwards when an attack was made on the accuracy of the percentage of deaths per 1,000 in this city. I asked the Chicago Medical Society to appoint a committee to go over the system of recording deaths to determine if there were any inaccuracies or loop holes that would in any way affect the general average. The committee after a thorough investigation reported that the mortality of 13 and fraction per 1,000 of population was absolutely correct and that there were positively no loop holes for error in our method of recording vital statistics.

THE RELATION OF BIRTH REPORTING TO INFANT WELFARE

MR. WM. L. BODINE, Superintendent of Compulsory Education, Chicago Board of Education: I will state concisely that birth registration is absolutely necessary to protect the child welfare laws of Illinois. You have the Compulsory Education law, Age of Consent law, Child Labor law and other laws for the betterment and advancement of children in this state.

The compulsory education law provides for the child between the ages of seven and fourteen, and at fourteen the child must either go to work or continue at school. The child labor law provides for hours of employment and protection of children between the ages of fourteen and sixteen and this law is dependent, for the actual age, upon the school record.

What are you going to do for an accurate record when any parent can go to the school and prove that that record is incorrect, or with the schools where the birth certificate is not insisted upon, as in many it is not. The principal should insist upon it, but when a parent brings a child into school and says he is six years old his word is accepted.

Quite frequently it is possible for parents to take a child of six to school and say that it is eight and his word is not disputed. At the actual age of 12 if they want to put that child to work they can do so because his age appears on the school records as 14 and they can get a certificate. The child is placed in a factory at the sacrifice of his education. Three-fourths of the children who go to work have not completed the 5th and 6th grades.

Sometimes we can refer to the church or baptismal record where they exist.

The age is the factor in these laws. It is the factor for prosecutions, in our cities where we apparently have so many wolves that are creeping closer toward the girl in short dresses. I am kept busy in the Municipal Court prosecuting men who are offenders against girls under sixteen. Much depends upon the age of the girl in Chicago and if we had some central place where all births were registered the age of every child would be determined without a doubt and the contamination of girlhood checked by more successful prosecutions.

We have 187,600 babies in this city (and by "babies" I mean under four years of age). Check up the reports made to the County Clerk in the last four years and you will see that not over 40 per cent. of those births were registered.

About eight years ago Dr. Webster was present at that famous beef-steak dinner when I made a speech at the old Sherman House, and I emphasized the necessity for having a compulsory adequate birth registration. At Springfield some of the down-state members objected strongly because it was too much trouble. When they realize what it means in after years to have protected the welfare of the child, they will be converted.

In this city age is the determining factor in admission to the institutions; the House of the Good Shepherd, the John Worthly, and the Parental Schools. The age must be determined frequently when parents, principals and the school records conflict. The parents come in and contradict practically their own records that they made when the child was originally entered at school. There is, too, sometimes a conflict between the public and the parochial school records, although as a rule you can determine definitely the age of any Catholic child by reference to the church records. Sometimes parents have gone to the County Court and sworn to the age of a child when they wanted to make it appear older. It is a

pronounced and false affidavit, and we have had trouble enough in the past with false affidavits.

I can readily understand why doctors and midwives have not reported all the births. I want to be fair to the doctors; they are busy people, but we must also be fair to the parents and fair to the child. Every child has a right to be *well* born and *counted*, but every child is *not* well born and every child is certainly *not* counted.

The state law provides that the physician must report within thirty days the birth of a child and all statistical data regarding it to the County Clerk. That law is a farce as is also the law that provides that for said reporting the physician shall receive a fee out of monies "not otherwise appropriated," as they are always "otherwise appropriated" and the physician has not, until recently, been receiving his fee.

The law provides that the name of the child shall be a part of the report. Not every parent is ready to report the name of the child at once. Some can, others cannot. I knew of one instance where a child was named within an hour after it was born; there was an instance where the parents were ready; they wanted that child registered. In other instances parents neglect their duty in this respect, the physician is busy and under the present system he is put to a great deal of inconvenience, but we should have all births registered. It means much to the child, in later years,—much to social service interested in welfare work.

The physician should be paid for every birth he registers. The present County Commissioners this year appropriated a fund of \$5,000 for this purpose—the first time, I believe, that any money has been definitely set aside for this purpose in Cook County, but gradually we shall come to greater recognition. We never heard of a physician being prosecuted for not registering a birth. I do think, however, that it is the duty of a physician in every instance where this statistical data is available, where there is a fee paid for rendering the service, that the physician should report births without discrimination.

There are other reasons why some people do not want all births reported. Perhaps it is a good thing for the moral welfare to have an adequate birth list. I have been Superintendent of Compulsory Education for fourteen years. I am not here as a theorist.

You represent the public, you doctors, and so am I a fellow physician—a doctor of humanity. I have the greatest "social clinic" in this community. I am a surgeon, so to speak, in trying to mend broken lives of children and the broken hopes of children. I find that they need the psychopathic; I find that they need medical attention—many of these children. I find many of these boys and girls who go wrong need the physician instead of the policeman. Nearly 56 per cent. of the children who go wrong have visual defects, many are undersized, under weight, a great many are under fed, victims of malnutrition. They should be normalized. Their lives are out of tune, they are children of *fate* having been transferred to children of state. I find that many of them come from insanitary homes. Many have adenoids. They are the children who *never had a chance in life*, and slowly, but surely, *progressive* philanthropy is finding that *the physician is needed more and more in Juvenile work*.

Dr. Walter S. Christopher (now dead) established child study work at the Board of Education. In trying to find out what to do for the child, we try to find out what is the matter with him, whether or not he is a normal child.

We have 771 children in sub-normal rooms in the public schools of Chicago. We need more of these subnormal rooms. Your defectives are increasing at an alarming rate. There are so many defective children! If you would conserve childhood you must conserve *parenthood*, for it is from the tree of unfit parenthood that so much of the speckled fruit of childhood falls. We must pay more attention to physical welfare. Many times after the birth we must turn to the physician during the child's life, be it boy or girl.

We need the physician in all of our institutions and every physician will tell you that that is no exaggeration. The Parental School provides for something like 500 boys every year. The House of the Good Shepherd has from 350 to 450 girls. The John Worthy at St. Charles also provides for boys and Geneva is the State's

contribution for delinquent girls, but this great state of Illinois, this great city of Chicago, this great county of Cook has *no place to put an epileptic child*, and there should be a place to put that epileptic child. Judge Pinckney and others besides myself realize this and *we hope that the physicians of Chicago will become interested in this subject*.

Why this alarming increase among defective children? It is the same old indifference of parents, or the incompetence of parenthood. It is due largely to the fact that by the grace of your weak farcical marriage law—which is a joke of jurisprudence—the epileptic, the illiterate, the habitual drunkard can wed, and spavined Decembers can clutch across the span of life for the rosy May in short dresses. Yet you wonder *why* there are these defective children. I sincerely hope physicians will become interested in this subject and that their interest will not stop there. *I want the physicians of this town interested in my work*, I want the public educators and the Parochial school instructors interested, and the workers at the Juvenile Court, and all agents trying to uplift and give the child the chance to which he is entitled.

There is no race suicide in Chicago. In one block in the Polish district I found 1,123 minors. I know for I am the man who counted them, and in this instance I mean those *under 21 years of age*. We save the children from the cradle to sixteen and at that age we abandon them. Between sixteen and twenty-one I imagine you physicians have as many patients as you have at any other age.

Sooner or later the question of sex hygiene must be taken up. I have seen girls come into the Courts with tears burning heavily upon what was once a virgin soul, simply because they did not *know*. And beside them stood their mothers broken hearted, who did not *tell* the girls who did not *know*. Whether it will ultimately be determined that this is a question for school instruction or whether it will be left for the homes, we do not know, but I think something should be done to teach our boys and girls. Blessed is the father who can walk and *talk* with his son, and blessed is the mother who can show her daughter the scarlet lights that confront every girl in the city of Chicago.

The trouble is that the boy of sixteen knows too much and the girl of sixteen does not know enough for her own protection.

Reverting again to the fact that we must know the ages of girls—whether they are sixteen or under: ask your States Attorney, ask any man who has served on the Grand Jury, ask any policeman, truant officer, or anyone doing welfare work, and you will find them in favor of a better system of birth registration.

The *little* citizen is a *big* question and one of the biggest parts of it is infant welfare work. Maternal inefficiency has killed as many babies as any disease known to medicine. There is an alarming mortality under one year of age, many of which could have been saved.

I want the physicians to become more interested in this as a general proposition and in infant welfare in particular. You can all help along the matter of birth registration and I will be glad to give any physician statistical information, and so will Dr. Ohls of the Health department. We should encourage the vital statistics branch of that department for the sake of humanity in general and childhood in particular.

DR. J. FAYL BIEHN: Attending the recent meeting of the International Congress on Hygiene and Demography in Washington, I was surprised to see the amount of work being done along these lines. One of the most interesting exhibits at the meeting and the largest attended was that contributed by Massachusetts on infant welfare.

DR. A. M. CORWIN: I can not refrain from saying that this excellent program should by all means be repeated at the meeting of the central society. Vital statistics, like all statistics, have not a vital interest to the ordinary man unless he can be captured by some finesse and made to listen, when immediately a live paper like that of Dr. Ohls and this live talk of Mr. Bodine get under his hide. We as doctors need to hear and discuss these near subjects of medicine and know of them. This matter of vital statistics needs pushing in order that the aroused organized profession may know and act for the needed legislation that shall put Illinois in the front rank instead of keeping her a mere camp follower.

THE VACCINE TREATMENT OF SOME UNUSUAL INFECTIONS, WITH REPORT OF CASES *

(From the Memorial Institute for Infectious Diseases, Chicago.)

E. C. ROSENOW, M.D.

A case of streptococcus lateral sinus thrombosis following double otitis media; streptococcus pneumonia (two attacks); mastoiditis; multiple suppurative streptococcus arthritis and cellulitis; pericarditis.

The patient, a young man, aged 19 years (seen with Dr. Phillips and Dr. Walter), contracted a severe cold, followed one week later by right otitis media and pneumonia of right lower lobe. The condition of the patient during this attack of pneumonia was alarming, the fever high, and the pulse rapid and irregular. The temperature dropped to normal during the fifth and sixth days after the pneumonia developed. The discharge from the right ear continued, but the patient's condition improved rapidly, the pulse becoming slow and regular. Eight days after the temperature had dropped to normal he developed left otitis media. Paracentesis was performed at once but in spite of this he complained a few days later of a feeling of fullness and pain back of both ears. Both drum membranes were incised freely under gas by Dr. Walter, and much bloody pus escaped, but the pain over the mastoids was not relieved. The following day when I saw the patient the first time, a blood-culture proved negative. A blood examination showed 12,000 leukocytes and 83 per cent. hemoglobin. The opsonic and the phagocytic indices were found normal. The general condition of the patient was good. The bloody pus from the ears showed many leukocytes and an active phagocytosis of streptococci.

Two days later when I saw the patient the second time, the tenderness over the mastoids had disappeared, the discharge from both ears was now small in amount and contained only very few leukocytes but an extraordinarily large number of streptococci. The patient's condition was serious, the temperature ranging between 105 and 106.5. The pulse was very rapid and irregular. A blood examination showed only 5,000 leukocytes, the opsonic and phagocytic indices only one-third the normal. A second blood-culture now showed streptococci. It was evident that something serious had happened. There was given 20 million heat-killed homologous streptococci. The phagocytic power of the blood improved and the leukocytes increased.

Three days later a mastoid operation was performed on the right side, and a very small amount of pus was found and no thrombus in the lateral sinus. The patient's condition did not warrant operating on the opposite side. The temperature did not drop and the general condition remained about the same, but more critical. The right lower lobe again became consolidated, the temperature ranging between 103 and 106.5 and the pulse very irregular for a period of four weeks. There was given every five days from 20 to 80 million heat-killed homologous streptococci. The

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May 22, 1912.

phagoeytic power of the patient's blood as compared with normal blood and leukocyte counts, were determined nearly every other day and it was found that while the temperature and the general condition of the patient did not always show an improvement following the vaccinations the phagoeytic power of the patient's blood quite regularly improved. Metastatic abscesses developed in the right ankle joint, about the elbow, several areas about the hip and sacral region and the abdominal wall. These abscesses were peculiar in forming rapidly and in producing a very large amount of pus, which always contained a large number of streptococci. Five blood-cultures were made in all; only one proved positive, yielding a pure culture of streptococcus. The virulency of a strain from the pus and that from the blood showed no appreciable difference, both being moderately virulent for guinea-pigs.

A series of animal experiments were undertaken to determine the protective value of the combined use of vaccine and antistreptococcus serum. A sample of antistreptococcus serum¹ was selected whose opsonic power was activated by the addition of both normal and patient's serum. Weaver and Tunnicliff² find that sera whose opsonic power cannot be restored in this way have no protective power against experimental streptococcus infections. Briefly stated the results of the experiments on guinea-pigs showed that the combined use of from 20 to 50 million dead streptococci given from six to twenty-four hours previous to the injection of the culture and antistreptococcus serum protected completely against doses which killed the control animals in from sixteen to twenty-four hours. Phagocytosis and intraleukocytic destruction of streptococci was exceedingly marked in animals which received the vaccine and antistreptococcus serum while little or none occurred in the controls. Antistreptococcus serum alone prolonged the life of the animals for twenty-four and forty-eight hours but did not prevent death. Peritoneal smears showed some phagocytosis and destruction of organisms soon after injection. The experiment was repeated three times with the same result.

Accordingly it was decided to give the patient antistreptococcus serum and vaccine. Twenty cubic centimeters were injected subcutaneously daily (on several occasions into the abscesses) for fifteen days, and a vaccination every third day. The patient's condition improved. The abscesses healed rapidly and only one new abscess appeared after the injection of serum was begun, the temperature came down gradually, the pulse became more regular, the appetite returned and for three weeks his temperature was normal and he was gaining rapidly, in weight and strength. The cardiac arrhythmia from the beginning was characterized by alarmingly long pauses. This condition even improved but did not entirely disappear. The blood-pressure ranged between 110 and 120. But in spite of the great improvement the patient died suddenly one morning during deep sleep.

A post-mortem examination revealed a healed lateral sinus thrombosis. The sinus was obliterated, the thrombus well organized and cultures from the heart's blood and spleen proved sterile. No gross nor microscopic

1. For which I am indebted to Parke, Davis & Co.

2. Jour. Infect. Dis., 1911, ix, 130.

lesions of the heart could be made out except a localized healed area of pericarditis over the anterior aspect of the left ventricle. There was no endocarditis. The brain, lungs, spleen, liver and kidneys showed no noteworthy, gross or microscopic changes. No definite cause for the sudden death could be found. It was certainly not due to degeneration of the heart muscle nor to embolism. On account of the peculiar arrhythmia, it was probably due to inhibition of the cardiac impulse. It is easily conceivable that there occurred a small embolism along the conducting paths in the Hiss bundle for example, and that through cicatricial contraction the nerve impulse could be cut off. The beneficial effects of the vaccines especially in conjunction with the antistreptococcus serum were evident clinically and proven experimentally.

In two other cases of severe streptococcus infections the combined use of homologous vaccine and antistreptococcus serum seemed to have a marked beneficial effect.

Multiple Destructive Staphylococcus Arthritis.—Young woman, aged 30 years, entered the service of Dr. J. L. Miller at the Cook County Hospital, stating that she had always been well until three weeks ago when she had chilly sensations, nausea, but no distinct chill. This was followed consecutively by pain in the left wrist, left elbow joint, the right wrist and later in the left knee- and ankle joints. The joints became hot, swollen and very tender. One week later her neck became stiff. There was no previous sore throat but for two weeks the patient was unable to breathe through the nose. An examination on entrance at once made it evident that the arthritis was not of rheumatic type. The joints were much swollen and very painful, crepitus was easily elicited in the left wrist and ankle-joints. The joints grew worse, the metacarpal bones in the left wrist, for example, were easily displaced and grated freely. Skiagraphs showed marked destructive lesions. The patient's general condition was bad. Three successive blood-cultures by myself and one by the house physician showed in each case a pure culture of a peculiar staphylococcus which grew readily on ordinary media, producing an abundant grayish somewhat viscid growth on the surface of agar. It caused no hemolysis in blood-agar plates. A puncture of the left wrist yielded a serous fluid with not many leukocytes but from which this organism was isolated.

A search for an infection atrium revealed a bad condition of her teeth and gums. A "gum boil" with a discharging sinus was found and from the pus a staphylococcus resembling the one described was isolated. A vaccine was prepared and from 50 to 250 million dead organisms were injected at intervals of from five to ten days. After two injections the subjective symptoms had improved markedly, the temperature which had been running from 100.6 to 101.6 F. for three weeks now stayed below 100 F. and after four injections remained practically normal.

The leukocyte counts were never above 8,000.

The patient remained at the hospital for a long time and even now has not entirely recovered the use of her joints. The infection has long ago disappeared and she is suffering from the marked bony destruction that occurred in the beginning of the attack.

Double Otitis Media due to Pseudo-Diphtheria Bacillus.—The otitis media began during a severe attack of scarlet fever, one year ago, in a young girl aged 9 years. The discharge of pus was profuse without interruption for months in spite of the usual remedies. Smears and cultures yielded a pure culture of a pseudodiphtheria bacillus. A vaccine was prepared and increasing doses, beginning with 10 million, were injected every six to seven days. The discharge began to diminish after the first injection and permanently disappeared after six injections.

Recurrent Attacks of Coryza Due to Bacillus Mucosus.—The patient, a middle-aged man, a physician by occupation, has been troubled with recurrent attacks of coryza for past ten years. During the warmer weather the attacks are milder and less frequent but during the winter they are often severe and characterized by a large amount of mucoid and mucopurulent discharge. The trouble began ten years ago and there was found at that time the Friedlander bacillus. This organism was isolated from the nasal discharge in predominating numbers on three occasions, seven or eight months ago. A vaccine was prepared and given at intervals of from seven to ten days for four months with the result that the patient had none of his attacks and has felt better than for years. During March the patient went south for a number of weeks, discontinued the vaccinations, returned, and after two weeks contracted a cold. Cultures on two occasions, however, failed to show the presence of this organism but a pneumococcus instead. The attack differed from his old ones; he recovered promptly and has not had a recurrence since.

Infection of Cheek and Neck in a Young Man (a case of Dr. Moorehead).—The infection in the beginning was very severe while later it was milder in character. The infiltration became board-like and contained small pockets of pus. These were incised repeatedly and were always found to contain a peculiar bloody foul-smelling pus. This had continued for months. Improvement in one area after incision and drainage was constantly followed by an extension in another adjacent region. *Bacillus fusiformis* and what appeared to be *streptococcus viridans* were found repeatedly in pus from the pockets in more or less direct connection with the mouth. In an abscess low down in the neck, however, the bacillus *fusiformis* was found in pure form. A blood-culture three hours after the last operation in which a number of pockets were opened yielded this bacillus in pure form in the flasks placed under anaerobic conditions. Subcultures unfortunately failed to grow. A vaccine was prepared from the growth obtained by spreading the pus from the abscess which showed the bacillus in pure form over the surface of blood-agar slants and incubating them anaerobically for forty-eight hours. Injections were made at intervals of seven to ten days. The result was striking. The induration which was so persistent rapidly disappeared and the patient felt better, entire recovery ensuing. A similar result was obtained in another case.

Chronic Gonorrhea in a Man aged 28 years, of seven years standing.—The various standard methods of local and internal treatment were tried one after another, but with only temporary relief, in each instance. Smears of the pus showed numerous gonococci. A culture was made on

blood agar on two occasions but with negative results. A third attempt where the cultures were made immediately after the pus was obtained and at once placed at 31 C. yielded nearly a pure culture of gonococcus. Subcultures were made and a vaccine was prepared. Six injections of from 25 to 250 million were followed by entire relief, now six months since.

A Case of So-Called Idiopathic Perforation of the Nasal Septum in a Young Woman.—The difficulty referable to the nose consisted of occasional bloody discharges associated with what was considered a continuous cold in the head. The condition began three months ago soon following a periosteal tooth abscess which perforated into the antrum and which was a long time in healing. When I first saw the patient there was found an oval perforation of the cartilaginous portion of the septum, 1 cm. in diameter. The margin consisted of an angry-looking bleeding ulcer. The adjacent mucous membrane was red. There was no reason to suspect, nor any evidence on physical examination of a syphilitic infection and a Wassermann test proved negative. There was found a moderate leukocytosis which disappeared promptly with the improvement. Three successive cultures showed the presence of *Staphylococcus pyogenes aureus* in almost pure form. A vaccine was prepared, and from 80 to 350 million injected every week or ten days. After two injections the margin looked less angry, the bleeding was markedly less and the coryza had entirely disappeared for the first time in weeks. After six more injections the margin had entirely healed and two cultures showed that the *Staphylococcus aureus* had disappeared.

DISCUSSION

Dr. Adolph Gehrmann, Chicago: There is a great deal of literature on this subject and the advertisements of the manufacturers contain much in advocating and popularizing the use of autogenous and stock vaccines. The possibility of finding that one bacterium disappears under the use of an autogenous vaccine, and then later finding another as the chief form is not unusual. Sometimes as many as three organisms may be affected by individual vaccines. The important point being that a mixed vaccine in such cases is to be advised.

With regard to using diphtheria bacillus vaccines, I wish to say I have seen violent reactions, and therefore would recommend caution in using them, especially in the initial dose. If too large it may frighten the patient by the extent of local swelling or too large a dose might disturb the patient's condition.

Dr. Rosenow (closing): In the case of otitis media the cultures on ordinary agar in my hands, just as in the hands of the intern, yielded a pure culture of staphylococci. When I plated it out on blood agar, however, I found 90 per cent. of the bacteria present, to be typical virulent pneumococci. That is one of many illustrations in which the importance of accurate bacteriologic diagnoses is necessary before we can properly treat cases by the use of vaccines.

I must say in the cases of diphtheria-like organisms, I have had no reaction. It may be that I did not prepare the vaccine in the same way that Dr. Gehrmann has. That is one of the rather striking things in this instance, that this girl had no local reaction whatsoever, and I began with a small dose and then gradually increased.

In one case of chronic gonorrhea in which I prepared an autogenous vaccine I was able to relieve the patient from a gonorrhea that resisted all forms of treatment for seven years.

A CONSIDERATION OF EXTRA-UTERINE PREGNANCY WITH REFERENCE TO ETIOLOGY *

A. MERRILL MILLER, M.D.,
DANVILLE, ILL.

The question of extra-uterine pregnancy since its recognition has been one of perennial interest. I am familiar with nothing in the medical or surgical field so abrupt in its onset or so terrible in its consequences as a tubal rupture. When a coroner reports 1 per cent. of deaths in women due to ruptured tubal gestation we should look upon it with concern.

Only through the united and intelligent cooperation of family physician and surgeon can we hope to reduce the invalidism or mortality which is too often a consequence of tubal pregnancy. We possess no knowledge of prophylaxis.

Sudden deaths in pregnant women have occurred and are recorded for nearly a thousand years. Thanks to the study of living pathology we are now prepared to institute palliative, even curative measures in these cases. Less than thirty years have passed since Lawson Tait made a successful attempt to treat this condition surgically. He failed in his first effort. The second was successful, marked the beginning of a vast literature, and placed the operation upon a sound surgical basis.

As evidence of a wide-spread interest every volume of our leading medical journals bears evidence. In practically none of them will you find twelve successive months passed without discussion; some of them even reporting a symposium upon the subject. This has placed a large volume of the best current thought upon the reading table of the busy man. He has read with profit. The character of articles changes as the subject becomes more crystallized, and different phases are now discussed rather than the subject as a whole.

The favorite classification has been merely descriptive of anatomic location. Whether tubal, ovarian or abdominal, we have to do with the same general symptoms and treat in the same general way. The abdominal and ovarian varieties must be looked on as pathologic curiosities, and by some regarded as secondary in every instance to the tubal variety.

A most confusing state of affairs obtains when we attempt to differentiate between tubal rupture and tubal abortion. This diagnosis is seldom made with a high degree of accuracy, and perhaps represents more of a distinction than a real difference. This may be said concerning tubal abortion; if the primary hemorrhage is not lethal the ovum, unless infected, is usually absorbed after a prolonged convalescence, and the danger of a second bleeding greatly diminished because the tube is empty. The frequency of tubal abortion can never be known. In fatal cases with postmortem, or in operative cases, the percentage of this to the tubal variety may be determined. But the great number which are manifest only by symptoms will always remain a matter of conjecture.

* Read before the Hoopesonton (Ill.) Medical Society, July 1, 1912.

Now concerning the *etiology*, we have a number of conflicting theories—none satisfactory. Every conceivable, sane and irrational theory has been advanced. The presence of adhesions and constrictions, the so-called mechanical theory is popular and by many thought to be near the truth. But why the constriction? It was not accidental. The fact that long periods of sterility often precede conception and frequently a gonorrheal salpingitis has been demonstrated, led Schauta to regard the gonococcus as the principal causative factor. I cannot believe this. From veterinary obstetrics we know that ectopic gestation is not unknown. The mare, cow, bitch, rabbit and sow have furnished numerous instances, and obviously the theory of gonorrheal salpingitis cannot be applied. The gonococcus has no natural habitat except in man and no experimental urethritis has yet been produced.¹

In woman the Fallopian tube is lined with columnar ciliated epithelium. The oviduct of the animals mentioned is histologically the same. These cilia maintain a wave-like motion toward the uterus and normally carry the fecundated ovum along the tube. To maintain this wave-like motion implies the presence of continuous nervous stimulation. I propose this explanation for the occurrence of ectopic gestation: that the arrest along the course of the tube is due to *want of motion* in the ciliated epithelial lining. This inactivity being due to some disturbance in their (ciliated cells) automatic mechanism or the absence of nervous impulse, a *depressor neurosis*. This will explain the reoccurrence in the stump of a resected tube or in the opposite tube; indeed it may be bilateral.²

It is usually rupture or at least symptoms indicating tubal distention that compels more than ordinary attention and hastens the call for a physician's help. The pelvic symptoms overshadow all others. Patients are apprehensive of this new and unusual abdominal discomfort. If discovered before symptoms manifest themselves it is more than likely an accidental finding.

By what means then will our attention be diverted to this unusual plight? There is perhaps no method of examination, in this as in most other surgical conditions, so important as a well taken history. Before rupture we may have the usual signs and symptoms of an early pregnancy. But since most ruptures occur from the sixth to the twelfth week the evidences of pregnancy are few. Absence or scant menstruation in a normal type accompanied by the usual morning sickness should arouse the suspicion of an existing pregnancy. The development of an ovum within the narrow confines of a Fallopian tube always gives rise to a feeling of distention and cramp-like pains in the lower abdomen. This tubal discomfort may be slight and since most women expect certain abdominal distress little attention may be given to it. A sudden cutting pain distinctly localized well down in the pelvis with a history of delayed menstruation should impel action on the part of the medical attendant. It means the tubal wall has given way.

1. Hiss and Zinsser: T. R. of Bact., 1910, p. 384.

2. Boldt: Arch. Diag., 1908, p. 32.

HEMORRHAGE

There is exquisite tenderness over the point of injury. The unmistakable evidence of pain, rapid pulse rate and cold extremities are practically constant with bleeding. Pallor and air hunger complete the picture of shock. If continued, a decided fall in blood-pressure is apparent and the call for water or ice insistent. Once witnessed, it is never forgotten. There is no pain like it; with no other suffering is there the same feeling of apprehension. We do not encounter this condition without fever or previous illness in a healthy woman. Repeated exacerbations of pain mean repeated hemorrhage with increased distention. The onset of menstruation during the succeeding forty-eight hours will clear up the above mentioned symptoms.

It is especially important now to differentiate between simple abortion and ectopic gestation. The manipulation incident to curettement might initiate another and final hemorrhage. If there is no history of a fetus being expelled and we find the uterus 5 or 6 inches deep and empty the chances are largely in favor of abdominal mischief. The uterus does not admit a probe or curette a distance of five inches in the absence of serious disease or pregnancy. I think this point has not been sufficiently emphasized by clinicians.

The vaginal findings should be considered and the bladder emptied before examination. With pregnancy the cervix and vagina show the characteristic venous engorgement. The soft mass of clotted blood, if present, is lateral to the uterus and contains the ruptured and highly sensitive tube. If the presence of a tumor or mass is made out a surgical diagnosis is established and this is sufficient to warrant an abdominal section. It is of vital concern to our patient to recognize a pelvic tumor with the above symptoms. The finer points of a pathologic diagnosis can be determined at a more opportune time. A twisted pedicle of an ovarian cyst or volvulus is a most confusing predicament.

Certain facts in the enormous literature and statistics compiled since the time of Tait afford us much comfort. If any fact has been clearly demonstrated by clinical reports it is this—the primary hemorrhage seldom causes a woman's death if no meddlesome procedure is undertaken. If more than 90 per cent. recover from the initial shock we cannot complain that Nature has failed in her part.

The profession almost unanimously has conceded this to be a surgical condition that should be treated along well established lines of surgical procedure. The question is not—*shall* we operate, but *when* shall we operate. Upon this decision largely depends her chances for recovery and calls for nice judgement.

The whole question of treatment is now passing through a period of evolution and debate which characterized the subject of appendicitis twelve or fifteen years ago. Glory to the surgeon is not in proportion to the quantity of blood scooped from the abdomen of an exsanguinated patient, any more than in the quantity of pus liberated from an abscess following a neglected appendicitis.

However, to rush into an emergency without preparation or assistance irrespective of the profound shock will certainly increase the mortality record and the public contempt for surgery. If patients must die, do not expedite their departure. Careful supervision will often turn the chances for recovery in her favor.

I favor the use of morphin hypodermically in sufficient doses to stop pain and quiet the patient.

There is scarcely a dissenting voice against surgery for the cure of this condition. Nice judgment is required to select the time and place which will minimize the danger already present. The necessity for completeness in preparation is imperative. To operate in the presence of extreme shock too often means death on the table. The tendency to wait for a reaction to take place has become the rule of most operators. The danger of a prolonged period of delay invites infection of blood-clots from adjacent intestines.

The only course of safety lies in the removal of the diseased tube; a ruptured tube is diseased. This should be at the uterine extremity since recurrence has taken place in the stump of the same tube (Coe, Taylor). Extreme care in the removal of blood clots from the peritoneal cavity is not necessary since they are absorbed, and the time lost may decrease her chances of recovery. In the absence of infection, close the abdomen without drainage. Now is the time to stimulate.

508 The Temple.

IMPORTANT EYE SYMPTOMS IN ALBUMINURIA OF PREGNANCY *

A. B. MIDDLETON, M.D.

PONTIAC, ILL.

Occasionally in cases of albuminuria of pregnancy certain eye symptoms present themselves, the early recognition of which means much for the patient's future power of vision.

True pathologic eye symptoms do not accompany all such cases; in fact they are only found in a small percentage of them. Some come on suddenly and pass on toward total blindness and some are more or less transitory, not accompanied by any marked lesion of the fundus oculi, while others less intense but more lasting progress steadily and slowly with marked fundus oculi changes that are plainly seen with the ophthalmoscope. These latter symptoms are the ones that will be considered: viz., albuminuric retinitis and optic neuritis found in cases of pregnancy.

A pregnant patient with a renal affection great enough to cause a dimness of vision to such an extent that she cannot thread a needle or read ordinary print easily, with spells of temporary blindness during which time everything is dark about her or at times sees all colors of flowers and lights, is suffering from an extensive auto-intoxication.

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

Toxins that are strong enough to cause a paresis of accommodation and such a symptom as I have just mentioned are certainly toxins of a very serious nature. If these symptoms are allowed to go unchecked, the patient will soon have eclampsia and possibly die. If she does not die she is most certain to develop an albuminuric retinitis or an optic neuritis that will impair her vision the balance of her life, or possibly there might develop total blindness without visible fundus changes. Such cases are known as uremic amaurosis; not the slightest sign of a retinitis or optic neuritis is to be seen. When the auto-intoxication leaves the cases that it has caused to have such symptoms, the vision usually returns and if there are but few attacks the vision might not be impaired at all. These extreme cases however usually have nervous symptoms such as headache, vomiting, dysphoria, loss of consciousness, convulsions, and symptoms of uremia following the return of sight. The pupil reaction is of no value whatever in the most marked cases. The reactions to light are perfect, due to the fact that the trouble is not in the retina or the optic nerve itself, but is in the higher sight centers of the brain.

Albumin toxins usually cause the eyes to be affected alike, while if one eye alone suddenly becomes blind, it is as a rule the result of an intra-ocular hemorrhage which might come in any case of pregnancy with or without albuminuria. These symptoms are found mostly in cases of primipara where the patient is well along in years before the first labor. Besides the trouble seldom, if ever, presents itself before the sixth month of gestation. Blindness is not primarily due to the albumin in the urine, but is the result of a secondary effect produced by the albumin toxins upon the higher sight centers within the brain, which in turn destroy the retina and optic nerve.

DISCUSSION

Dr. Benjamin Gleeson, Danville: I do not think cases of albuminuric retinitis are as rare as the doctor thinks they are. I have in a period of three years seen three cases of which all have resulted fatally. One was a case of a young woman, nineteen years of age, which I saw a year ago last May. She at that time came in for a case of refraction, and I refracted her vision at 20/30, and there was absolutely no fundus lesion so far as I could see. In two weeks she came and said she could not see very well with those glasses. I sent her back, and in a month she returned and said there must be something wrong with her eyes as she could not see as well as she should. At this time I took her in a dark room as in the other examination and I found one of the most pronounced changes had taken place. I took her to the test card and found the vision had changed from 20/20 to 6/200. I sent her to the hospital, put her on the ordinary treatment for this condition and constitutionally. Her family physician was in charge of the case as well. After a period of ten days there was some improvement. After that she began to have some dropsical symptoms and Dr. Herrick of Chicago was called in consultation on account of the constitutional symptoms. He saw the case and also examined the fundus of the eye, and he could not be made to believe that the case was 20/30 six weeks before. The further history of the case showed that during the past two months she had passed an enormous amount of urine. Dr. Herrick gave her a rather serious prognosis as to the vision and also regarding her life. In a period of a month's time her vision returned from 6/200 to 20/40.

She was to be married two months later. We gave her absolute instructions not to be married. Dr. Herrick advised her not to be married. Without our advise she was married and left our county and started to the State of Washington to live. In the State of Kansas she stopped to visit her grandmother and was taken ill and was ill three weeks before going to Washington, and on her arrival took to bed and died in three weeks from uremic coma.

I have since had one or two cases. One woman was treated for headaches for three months. She was afterwards referred to me on account of the headaches. Her vision was 22/100 with distinct albuminuric retinitis. She died within four months after I had seen her.

I also have in mind a married woman whom I have seen for two years. She was a primipara, having already borne one child. She had albuminuric retinitis of pregnancy and within four months she was dead.

Dr. C. A. E. Lesage, Dixon: I think the speaker that preceded me misunderstood the essayist. The text of the paper, or the title of the paper was specifically "Albuminuria of Pregnancy." He reports a case, as I understand it, of a single woman.

Ocular symptoms occurring during pregnancy in women who previous to pregnancy had nephritis offer a worse prognosis than ocular symptoms occurring during pregnancy without a previous kidney lesion, and in those patients suffering from nephritis and subsequently becoming pregnant the eye symptoms usually appear earlier during pregnancy, during the earlier months.

It has been distinctly proven that it is not the albuminuria present, because many of these cases do not have albuminuria, but it is the toxemia that causes the trouble.

Dr. A. E. Prince, Springfield: I did not hear the paper. There is just one thing I had in mind and that is, if a woman goes through pregnancy and has albuminuric retinitis, and she becomes pregnant again she ought to have an abortion. This is my recommendation and I think it is perfectly justifiable, and I explain the matter to the patient and the family physician.

Dr. George F. Suker, Chicago: I would advise an abortion to be performed in the second pregnancy provided the albuminuric retinitis at the time of the first pregnancy was accompanied by mental complications.

Dr. Middleton (closing the discussion): I only wish to state that albuminuric retinitis and albuminuric optic neuritis ought to be discovered the first time the patient is pregnant if possible. I quite agree with Dr. Prince and Dr. Suker as to the advisability of an abortion in the second labor, providing the retinitis in the first labor was severe and complicated with serious mental symptoms, which would certainly mean eclampsia and possibly death the next time.

MOVABLE KIDNEY *

J. E. COLEMAN, M.D.

CANTON, ILL.

I believe the statement is true that the average practitioner of medicine is taught that movable kidney should not be operated on except in the third degree of mobility, and then only in those cases of gastric or abdominal crises which cannot be relieved by the use of a kidney pad or support of some kind.

It is evident that the general practitioner is first called to make a diagnosis. Is it then a medical or surgical case? I will not go into the

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

causes of movable kidney at this time but will state that it is almost always a slow process, that the kidney first drops over from the top downward and forward. This is because the kidney is more firmly fixed at the bottom than it is at the top. When the upper portion of the kidney falls downward and forward the kidney partially rotates on its axis thus interfering with its blood-supply and its nerve function with resulting kidney congestion and retention and gastric crises through irritation of the solar plexus.

When these symptoms arise the practitioner may have difficulty in making a diagnosis as to their cause if he follows the old method of examining the patient while lying on the back. In this position the kidney falls back into place, and cannot be so palpated. If, however, the patient be placed on the side, the top of the kidney falls forward and downward; then when a deep breath is taken, the kidney is further forced downward and the physician's fingers pressed deeply below the twelfth rib presses the kidney anteriorly against the abdominal wall, so that it can be easily palpated, the only exception being when the stomach and bowels are distended. It is not usually the kidney with the greatest range of motion which causes the most acute symptoms. I have seen many patients with pain, temporary fever and gastric crises in the early stages of mobility, who became fairly comfortable after the kidney had descended far enough to be freely movable. Such being the case does the treatment of movable kidney, in the early stages, fall to the general practitioner or to the surgeon? In my judgment, every time to the surgeon, and the earlier the better when vicious symptoms are produced. There is no more reason for a patient with movable kidney wearing a kidney pad than for a patient with hernia to be advised to wear a truss. Each is equally dangerous and irritating. The history of operative procedures are similar in both cases; the early operators for hernia had many relapses, the early operators for movable kidney had many failures; at the present day failure in both operations are almost unknown. Besides the dangers from traction on the kidney producing in some cases congestion with fever, or even temporary hematuria, there is another danger which should not be overlooked.

It is now well known that the kidney receives its chief support from the subperitoneal tissue. This assumes the character of a distinct fascia (the fascia renalis) which splits into a posterior and an anterior layer, surrounding the kidney, the ureter, and the blood-vessels. *It then extends upward and surrounds the suprarenal capsules.* Above the suprarenal capsules the fascia is so strongly fixed that the suprarenal bodies do not descend with the kidney when it becomes movable. However, when the kidney descends it pulls upon the suprarenal bodies through the renal fascia which surrounds them. We would naturally suppose that this traction and irritation would interfere with the function of the suprarenal bodies by interfering with their blood and nerve supply, and clinically we find this to be true. In very many if not all of these cases we find the characteristic asthenia both muscular and vascular, as well as the irritable stomach and quite often decided pig-

mentation of the skin just as we find in disease of the suprarenal bodies. These symptoms promptly subside in cases that have been operated on for kidney fixation. To avoid these dangers early operation for kidney fixation is invaluable. When patients refuse operation much good can be done by giving them desiccated suprarenals. There is no truth in the statement that the suprarenals are inert when given by mouth. These patients with depression and relaxed blood-vessels and muscles due to lack of suprarenal function, and caused by movable kidney or gall-bladder disease, at once revive and become energetic under the administration of desiccated suprarenals in 3-grain doses three times daily, and the tendency to brown atrophy of the heart seems also to be prevented or held in abeyance by this treatment.

CAUSES OF SOME NEPHRITIC SYMPTOMS *

E. C. FERGUSON, M.D.

EDWARDSVILLE, ILL.

The subject of interstitial nephritis is so enormous that a paper of this kind is impractical on this occasion and would occupy too much of your valuable time and could not be presented in an interesting manner in the short time at our disposal. I have therefore restricted myself to the consideration of only a few points on the subject: viz: alcohol as a cause; the cause of albuminuria and uremia; and hypertension.

These causes have been arrived at through clinical observation and some experimental work on the part of several writers and what I present here is a composite of their writings.

Alcohol. It is evident that, while some of the earlier writers on the cause of chronic nephritis do not think that alcohol can be considered an important factor, the consensus of opinion among the most recent authorities on the subject is that alcoholism is, without doubt, one of the most prominent factors, both directly and indirectly, in the etiology of chronic interstitial nephritis. Dr. W. G. Vincent, in an article published in 1907, says that the most prominent of the factors usually considered as causing or accompanying this disease are: 1, general arteriosclerosis; 2, chronic intestinal autointoxication; 3, alcoholism; 4, syphilis; 5, mental strain; 6, lithiasis; 7, gout; 8, lead poisoning; 9, any disease or derangement of function in the body which results in the long continued presence of irritating substances in the blood.

Dr. H. Senator writes in 1905 as follows regarding alcohol as a cause of contracted kidney:

In common with most authors the writer believes there is no doubt that the *chronic abuse of alcohol* is a factor in the production of indurative nephritis, although it must be admitted that its effects are frequently reinforced by other unfavorable conditions, such as exposure to cold and the like, and it is therefore difficult to secure accurate statistical reports. Even Dickinson, who condemns Christison's statements that three-quarters to four-fifths of all the cases of "*granu-*

* President's Annual Address, Madison County Medical Society, July 5, 1912.

lar degeneration" of the kidneys are due to drunkenness, nevertheless does not deny the influence of alcoholic abuse on the kidney; but from an analysis of the cases that occurred in St. George's Hospital between 1841 and 1871, he finds that cirrhosis of the kidneys is less common than cirrhosis of the liver, which is readily comprehensible. Dickinson believes that the excessive drinking of beer is especially harmful to the kidneys.

Ditman and Walker, writing in 1909 on nephritis, say, regarding the indirect effect of alcohol:

Of the ingested chemical substances used as foods or drugs, the one of greatest importance for our consideration in nephritis, is alcohol. Beebe has shown that alcohol, even when ingested in moderate amount, causes an increase in the excretion of uric acid. The effect, he proves, is due to a toxic effect on the liver, thereby interfering with the oxidation of the uric acid derived from its precursors in the food.

If we consider the origin of the increased quantity of uric acid to be in the impaired oxidative powers of the liver, the results of these experiments will have greater significance than can be attributed to uric acid alone; for the impaired functions would affect other processes which are normally accomplished by this organ, and the possibilities for entrance into the general circulation of toxic substances arising from intestinal putrefaction, for instance, would be increased.

The liver performs a large number of oxidations and syntheses designed to keep toxic substances from reaching the body tissues, and if alcohol, in the moderate quantity which caused the increase in uric acid excretion, impairs its power in this respect, the prevalent ideas regarding the harmlessness of moderate drinking need revision.

Alcohol is a food in the sense that when used in small quantities the energy from its oxidation may be used for some of the body needs. It not only undergoes oxidation, but it is easily oxidized, and thus, as can readily be understood, when introduced into the body in large amounts, it probably appropriates a large percentage of the accessible oxygen supply, leaving a diminished available amount for those fluids and tissues less readily oxidized. In this way abundant opportunity is given for the formation in the body of products of insufficient oxidation, many of which are toxic and capable of producing pathologic effects.

As a preventive measure directed against the occurrence of chronic nephritis, none is more important than the diminution or abolition of alcohol as a beverage. Its agency in the production of chronic nephritis has long been recognized and the prevalence of this disease in the greatest alcohol consuming countries is a matter directly traceable to this habit.

Prof. Carl von Noorden says that alcohol is one of the worst poisons for the kidneys when it is carried to them in the blood and circulates around and through their substance for any length of time; that it undoubtedly irritates the kidneys directly; and that this effect is the same whether it is absorbed from concentrated spirituous liquors, such as whiskey, or from mild alcoholic beverages, like beer, wines and cider.

This writer says that in cases of nephritis alcohol should only be occasionally used, therapeutically, under the directions of a physician, and that it is especially harmful in chronic nephritis, since in atrophic nephritis the arteries are hardly ever intact, and that "it is well established that next to the virus of syphilis and lead, alcohol is one of the substances which is most injurious to the arterial walls. The heart of atrophic patients is also threatened by alcohol; irritation of this organ by alcohol must be avoided as strenuously as irritation by other cardiac stimulants.

Dr. J. B. Herrick, writing in 1909 on the treatment of chronic interstitial nephritis, also says that alcohol must be avoided as it irritates the kidneys.

Dr. S. L. Beard, in a recent article on chronic nephritis, also considers alcohol as an etiologic factor and prohibits its use either in the form of whiskey, wine or beer.

Dr. James Tyson, writing in 1911 on chronic nephritis says that, while alcohol is often a cause of interstitial nephritis, over-eating and alcohol combined are a more frequent cause than either one alone. Also, that while he would permit a patient to use a moderate quantity of such wines as claret and sauternes (a wineglass or two at dinner), alcoholic beverages of high alcohol percentage, as brandy, whiskey, gin, sherry, port, and champagne, should be prohibited.

Dr. Ramon Guiteras in his 1912 work on Urology says:

"Alcoholic drinks are contraindicated in all cases of urinary disease, and yet, if a patient is below par or septic, they are often given. Beers and ales should be omitted in all cases, but light wines and spirits can be given in moderation."

Greene and Brooks, also writing in 1912 on the treatment of chronic nephritis, say:

"Alcohol is never to be taken except in small amounts or when the drug is needed for its therapeutic effect."

Albuminuria. Although albuminuria is not a constant factor in chronic interstitial nephritis, albumin not being present in the urine at all times, yet I think it best to speak of it and also tube casts, in order to study the source of albumin and tube casts. Here I recall a case of chronic interstitial nephritis in which is demonstrated the vagaries of the excretion of albumin and tube casts in the urine. The urine of a man aged 42 years, following a violent convulsion and with a pulse of 20 per minute, showed albumin in such quantities that, on boiling, the urine would not flow from the inverted test tube, and also, large quantities of granular tube casts. The following day I was much embarrassed when I was unable to show a consultant a tube cast or a trace of albumin in the same man's urine. This patient died three days later in convulsions.

There is a general consensus of opinion that the albumin of the urine largely comes from the soluble proteids of the blood and appears in the urine as a result of an increased permeability of the glomerular tuft. Degenerated epithelial cells may have a small part in the production of the albumin. Two theories have been advanced for the formation of casts, one that the albumin comes from the blood through the injured glomerulus; becomes physically changed and fuses into a coagulated mass. The other theory assumes that the albuminous material of the casts is derived from the albuminous material of epithelium of the tubules which become fused together into a cast of the tubule. This theory does not assume that there has been much change in the physical properties of the albuminous material between its cell origin and the cast.

Uremia. Dr. Victor C. Vaughan, in the *Jour. Am. Med. Assn.*, Nov. 27, 1909, says:

Although one hundred years have passed since the question of the nature of the toxic constituents of the urine was first submitted to experimental inquiry, it cannot be regarded as settled. The following points seem to be fairly well established:

1. Urea and uric acid are not important constituents of the urine so far as their toxicity is concerned. That is, neither of these can be regarded as the active agent in the causation of those symptoms that result from failure to function on the part of the kidney.

2. About 85 per cent. of the toxicity of the urine is due to its inorganic constituents, the most toxic of which is potassium chlorid.

3. There are certain organic poisons, the nature of which has not yet been ascertained.

4. Although the inorganic constituents, notably potassium chlorid, are markedly poisonous, they cannot be regarded as standing in a direct causal relation to that complex of symptoms which we designate as uremia.

From this Dr. Vaughan concludes that in withholding salts from our nephritics we are not withholding the direct cause of uremia. The best we can expect from a salt free diet is to protect the kidneys, by decreasing their labor and conserving their capacity as organs of elimination.

He further says it should be evident that poisoning due to the retention of the normal constituents of the urine and uremia are two quite distinct and different things. Cases of prolonged suppression have been repeatedly observed and, although these may terminate fatally, death is not due to uremia.

In uremia the poison results from a radical change in metabolism and the active agent produced is not one of the normal constituents of the urine.

Dr. Ramon Guiteras, an authority on the subject of urology, gives in his latest work (1912) a condensed historical review of the different theories as to the etiology of this disease, which we quote:

The principle theories of uremia may be tabulated as follows:

1. Mechanical: Uremia is due to cerebral edema.

2. Toxic: Monotoxic theories. (a) Due to the retention of urea in the blood. (b) Due to the formation of ammonium carbonate in the blood by micrococcus urea. (c) Due to fermentation of ammonium carbonate in the stomach and intestines from urea, and the absorption of the former into the blood. (d) Due to the accumulation of kreatin, kreatinin, uric acid, etc., as result of changes in metabolism. (e) Due to intoxication by the retention of urinary coloring matters. (f) Due to intoxication with potassium salts. (g) Due to retention of chlorid causing edema of the brain, etc.

3. Toxic: Polytoxic theory.

Not a single toxic substance, but a number of various poisons retained in the blood cause uremia.

Practically all the research work done in uremia since 1881 is based upon the theory of Bouchard. His definition of the symptom complex is that uremia is an intoxication due to poisons, either introduced from without or formed in the body, which are normally eliminated by the kidneys in the urine, but in certain conditions are retained, owing to renal impermeability.

According to this investigator, 47 per cent. of the poisonous effects of the urinary constituents are due to potassium salts; urea, ammonium carbonate, the extractives, the coloring matters, etc., may each play their part in the intoxication. Five distinct poisons, the chemical nature of which is not known, were isolated by Boucard from the urine.

A series of experimental studies on the permeability of the kidney have been published since, especially in France, and some recent investigators doubt the importance of renal impermeability in the production of uremia.

Insufficiency of the internal secretion of the kidneys and the liver, with failing compensation of the heart and increasing arterial tension, are believed by them to be sufficient etiologic factors, without any renal impermeability. The significance of toxic retention and renal impermeability is held by other observers, who explain the occasional absence of toxic substances from the blood in uremia by their absorption on the part of the tissues.

The retention of chlorids in the body has also been pointed out as a factor in the mechanism of uremia. According to Castaigne, "uremia is due to the retention in the body of multiple toxins from various sources and the retention of chlorids, both being the result of renal impermeability, without which no uremic poisoning can take place."

In another recent text-book in which uremia is discussed we find this statement:

Although it is generally admitted that uremia is a condition dependent on disease or inactivity of the kidney, the pathologic conditions that produce this inactivity are obscure. Uremia occurs not so very rarely when the quantity of urine excreted is normal and when the urea and other solids are still apparently in normal relation.

Uremia is generally regarded as the result of some form of poisoning, dependent on deficient excretion by the kidneys, of toxins formed in the course of tissue metabolism.

These writers then refer in detail to the various theories that have been advanced from time to time as to the cause of uremia, giving the same ones as we have already quoted from Guiteras, and also show how they have nearly all been abandoned, or at least not proved up to the present time. The theory that uremia was due simply to urea in the blood has been disproved; the creatinin retention theory has also been abandoned, and the question of the amount of hippuric acid in the urine is unsettled. Still other theories remain unproven, hence Greene and Brooks conclude:

In summarizing, uremia may be defined as a series of manifestations, chiefly nervous, developing in the course of Bright's disease, and probably due to the retention or presence, in the blood, of certain poisonous materials that most likely result from the abnormal action of degenerated renal cells. This is in substance the definition proposed by Osler.

Dr. James Tyson, writing on nephritis, etc., in 1911, says:

The exact cause of uremia is still unknown. This much only seems well determined, viz., that it is a condition especially characterized by coma and convulsions, brought about by some toxic substance or substances which the healthy

kidney separates from the blood, but which accumulates in the blood in diseased kidneys. It is further probable that such toxic substances are proteid in composition and of the nature of extractives. This much seems to be pretty well settled, that urea, whence the condition takes its name, is not the toxic substance. On the other hand, there is reason to believe that the alloxuric or purin bases, xanthin and hypoxanthin, which are virulently toxic, contribute to the toxins responsible for uremia.

Pearce says:

It would appear natural, in view of our knowledge of the pressor effect of adrenalin and of the experimental lesions produced in the rabbit by this substance, as well as of our knowledge of the frequent association of hypertension with the chronic interstitial nephritis and arteriosclerosis, to associate both the renal and arterial disturbances with some alteration of the adrenal. These suggestive facts, taken in connection with the rapidly accumulating evidence of intimate chemical correlation between widely separated organs, renders the problem an exceedingly interesting and suggestive one.

In his observations, Pearce took the descriptions of Aubertin and Ambard and of Vaquez and Aubertin as accurate depictions of the changes deemed by the French writers to be characteristic of chronic interstitial nephritis with hypertension. The adrenal glands studied by Pearce comprised groups of normal glands; glands from persons who had died of infectious diseases; those from persons free of chronic vascular and renal disease; those with contracted kidney, arteriosclerosis and heart hypertrophy; glands associated with arteriosclerosis with and without chronic nephritis; cases of chronic nephritis without arteriosclerosis; and other kidney and adrenal lesions. In the group with contracted kidney, arteriosclerosis and heart hypertrophy, twenty-four glands were examined from persons who had typical chronic interstitial nephritis (contracted kidney), with hypertension. Only one of these glands, he says, could be considered normal. This author summarizes his observations as follows:

Vaquez and Aubertin advance three theories in explanation of the adrenal hyperplasia; first, that it may not be the cause of hypertension but "antitoxic hyperplasia" caused by the retained products of metabolism which may be responsible also for the hypertension; second that it may be the cause of hypertension but secondary to the renal lesion; third, that it may be the cause of hypertension but may antedate the renal lesion or be entirely independent of it.

They, as well as other French writers, insist that this hyperplasia is almost constantly associated with chronic nephritis of the interstitial type and it is seldom found with the parenchymatous type of nephritis, or with other lesions.

Hyperplasia of the adrenal, as far as my material enables one to judge, does not occur during the first and second decades. In the third decade it is relatively frequent in the absence of chronic arterial and renal disease, but reaches the maximum in association with such disease after the fourth decade. It is an almost constant lesion in arteriosclerosis associated with chronic interstitial nephritis and left-sided heart hypertrophy, but occurs with almost equal frequency in arteriosclerosis with chronic nephritis of the parenchymatous type. It is a relatively frequent lesion of arteriosclerosis without chronic nephritis and of the latter

without arteriosclerosis also. As the result of this analysis one is led to the view that while hyperplasia of the adrenal is a very frequent concomitant of chronic renal and arterial disease, it is not exclusively a feature of either type of nephritis or yet of chronic vascular disease; but it probably represents the effect of some factor operating in that period of life in which chronic renal and arterial affections are most frequent.

Of the causes of hypertension we have only theories, based mostly on chemical observation and little experimentally, and this of a very negative character. All attempt to demonstrate some chemical substance circulating in the blood current and influencing the circulatory system and this substance the result of perverted metabolism origin. Another theory assumes a relation between disease of the adrenals and interstitial nephritis, referred to in the anatomical studies of Dr. Richard M. Pearce.

It is noteworthy that hypertension and cardiac hypertrophy occur in the group of kidney diseases in which uremia is likely to occur and like uremia is an evidence of renal insufficiency. This suggests a poison acting in common as a cause of the two conditions; if in small amounts affecting the vasomotor system, producing arterial tension, and in large amounts affecting the nervous system.

THREE CASES OF HERNIA COMPLICATED WITH UNDESCENDED TESTICLE *

W. F. GRINSTEAD, M.D.

CAIRO, ILL.

This had been a rarely observed condition in my work when, about two years ago I fell into a medical society discussion on the subject. An "occasional surgeon" reported two cases in his practice which were young men and found it necessary to remove the undescended organs in order to cure the patients. He could not restore them to their normal position. In the discussion that followed I took the position that it was wrong to castrate these young men and called attention to the fact that modern surgery had devised methods for the preservation of the sexual organs and their reduction to the normal location in almost all cases. The hernias can be cured at the same time. I do not think this work was done successfully before the blessing vouchsafed to us by Lord Lister. Pus infection would endanger the vitality of the testicle and the success of the herniotomy.

We can not discuss this subject satisfactorily or intelligently without first glancing at the anatomy involved. These hernias are of the congenital type, probably with rare exceptions. We know that the pouch of peritoneum, the vaginal process, precedes the testicle into the scrotum

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

and is subsequently invaginated by the former. If this invagination is incomplete, the abnormal position of the testicle tends to prevent the collapse of its walls which is necessary to its obliteration. This patulous condition invites the descent of the abdominal viscera and the establishment of congenital hernia.

If an undescended testicle is in the inguinal canal, or at either end of it, a truss can not be tolerated because of the pressure upon the testicle. The radical cure of the hernia can not be accomplished without putting this organ out of the way either by castration or transplantation. Until recently the former mutilation has been the rule and is yet, no doubt, too often employed. This is by far the easiest way to cure the hernia and get through with the operation; but it is not the best surgery nor the best for the patient.

To preserve the testicle and reduce it to its normal position is a tedious dissecting operation. The chief difficulty consists in the tension met in bringing the organ down. The structures of the cord are too short. The peritoneal pouch is unyielding and adherent to the cord and must be dealt with, both to reduce the testicle and cure the hernia. It must be severed transversely above the testicle, then ligated or dissected out as in the Bassini operation for radical cure. The lower end of the pouch, or that part of it adherent and adjacent to the testicle should be closed by suture to form a tunica vaginalis testis. It is usually necessary to sever the vessels of the cord to relieve tension, leaving only those of the vas. This was so literally true in my first case that I was on the anxious seat for a week lest the testicle would become gangrenous. I had read Jacobson's caution in the operation for varicocele, not to remove too many veins. He reported a case of the latter operation following which the testicle became black, dead and sloughed. It will be recalled that eight or nine veins are given off from the testicle to form the pampiniform plexus. They are reduced to four when they enter the inguinal canal, to two when they enter the abdomen and finally one which empties into the inferior vena cava on the right side and renal vein on the left.

The arteries of the cord and testicle are three: The spermatic, given off from the aorta, the cremasteric, given off from the deep epigastric, and the artery of the vas which is a small branch from the superior vesical and ramifies on the surface of the vas. The two former and larger are severed in depositing the testicle in the scrotum in most of these cases. It really looks risky but has proven safe in my hands and in those of others who have done much more of this work than myself. The major part of the extensive dissection is done with fingers and forceps. Oozing is abundant. Many times the testicle will be drawn down over the scrotum only to find there is too much tension and the dissection must be continued. Unless the cul-de-sac of the vaginal process of peritoneum furnishes a bed for the testicle, one must be made by tearing the scrotal tissues with the fingers and thumbs. This is not difficult. I push my index fingers into the sac with their nails approximated and

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then flex the terminal phalanges. The thumbs are pressed opposite on the outside to prevent traction downward on the scrotum.

Hahn's operation incised the scrotum sufficiently to pull the testicle clear through. It was then sutured by three or four silk stitches to margins and left for a week entirely outside to become adherent; then the skin was dissected and drawn over the organ. The objections to this method are that a second operation is required; there is greater danger of infection to say nothing of the disfigurement. The last objection may seem unimportant but young men find much gratification in the consciousness of having normal procreative organs. This is one of the



Figure 1. Case 1.

reasons why these patients should not be castrated. On the other hand they suffer much humiliation and mortification over the consciousness of being partially unsexed. Bevan's operation is the best. This method brings the organ into the newly made bed above described and anchors it there by a purse string suture passed through the tissues just above it but not through the skin. The inguinal canal is then closed over the cord.

In my cases I have made one departure from Bevan's method: I made a stab wound about 1 centimeter in length in the bottom of the scrotum and anchored the testicle to its borders by a stitch of small catgut on either side. I have two reasons for this departure from or

addition to Bevan's technique, namely: first, it provides a drain for the profuse oozing that must follow such extensive laceration of a vascular area; second, it substitutes the serotal ligament found in normal conditions which is shown so graphically in Figure 1070, DaCosta's Edition of Gray's Anatomy. It is the remains of the gubernaculum and serves to anchor the testicle to the bottom of the serotum. Its substitute by stitches confines the organ to the new bed made for it, and resists the



Figure 2. Case 2.

traction of the cord toward the inguinal canal. It removes, to some extent, the necessity for close constriction of the cord, which is already deprived of most of its vascular supply, by the purse string suture at the neck of the serotum. I believe these reasons are valid and that the innovation improves the operation.

If there are no urgent symptoms, this operation should not be undertaken till near puberty. At this age the structures are more fully developed, more easily recognized and more readily dealt with. The

surgeon is less likely to lacerate tissues that should be preserved intact. The incision is made over the inguinal canal and carried into the neck of the scrotum sufficiently to make room for the tunneling process into this closed sac and the easy introduction of the testicle into its new home. Preference is given to the method of uniting the conjoined tendon to Poupart's ligament over the cord, rather than under as in the Bassini method, because less tension is made on the cord. In other words, less length of cord is required. In one of my cases, however, the patient was 44 years old, had a troublesome hernia and I feared a return of the latter after operation. Believing the Bassini method gives the strongest resistance against recurrence and having little tension on



Figure 3. Case 3

the cord after it had been dissected out and the testicle brought down, I employed the Bassini method of transplantation of the cord. This patient requested me to excise the testicle entirely, but I refused to do it. I told him it was unnecessary and unjustifiable mutilation.

CASE 1.—A. B., aged 22 years, was operated on April 18, 1911. Had worn a truss for three years on right side. Testicle could not be felt. Bevan's operation was done. When the inguinal canal was laid open a loop of cord was detected near the internal ring. Gentle traction on this caused the testicle to pop out of the belly. Much difficulty was encountered in pulling the organ down into the scrotum. There was so much tension that all the structures of the cord were severed except the vas and its vessels. The testicle was smaller in size than its

fellow. It was finally placed in its normal position and a stab placed in bottom of scrotum as above described. The inguinal canal was closed over the cord. The dressings became thoroughly saturated from the oozing through this puncture. I was kept on the anxious seat for a week lest gangrene and death of the testicle might result from the diminished blood-supply. This alarm proved to be unfounded and the result demonstrates that the artery of the vas is sufficient to preserve the vitality of the testicle. We did get a mild infection and a sinus remained with scant discharge for three months. The photographs which I had made of this and the other two cases and which are herewith presented, show the gratifying results that were obtained.

CASE 2.—L. S., aged 19 years. Operated May 8, 1911. Testicle could not be felt but was found at internal ring at operation. It was obscured by inguinal hernia. The hernia was congenital. The sac was dissected out, the cord loosed as in Case 1 and the testicle deposited in the scrotum. The conjoined tendon was sutured to Poupart's ligament over the cord. The stab drain with two stitches for anchorage were placed as described above. He made an uninterrupted recovery and went home in two weeks.

CASE 3.—G. B., aged 44 years. Operated on Oct. 14, 1911. Had congenital hernia with undescended testicle. The latter was in the inguinal canal. He wanted the hernia cured because it was painful and interfered with his work. It is easy to understand that so sensitive an organ as the testicle can not endure the pressure of a truss. From some source he had the impression that it should be removed by castration and requested me to exise it. When I explained to him that such a radical procedure was unnecessary and that I could not grant such a request he left the treatment to my judgment.

On account of the age of this patient and his avocation in life I feared a return of his hernia. As a protection against this possibility and believing that the Bassini is the best operation for this purpose, and finding little tension on the cord this method was employed. So far as I have seen or heard of these cases they are all cured.

THE TREND OF MEDICINE *

W. R. ALLISON, M.D.

PEORIA

If you should invite a doctor to join our Society and be asked of what advantage it would be to him, what answer would you give? What profit have you gained by being a member of this organization? To say that ours is an organization of agreement, of united and progressive action for the betterment of ourselves, is a waste of words, because there is scarcely a law of our constitution that has not been broken, and probably no member who is not guilty of some infraction of our code.

We know that this condition exists, and this laxity is growing to such an extent that each is a self-constituted committee to do as he pleases, never dreaming that he has subscribed over his honor to support and abide by that which he so deliberately disobeys. The records of this Society are full of resolutions made obsolete by our indifference. This condition has made valuable members apathetic until they become indifferent, anemic and lapse.

The church nourishes the soul and prescribes due bounds; to transgress beyond brings disgrace, which repels sinful deeds, because of a

* Read before the Peoria City Medical Society, Nov. 4, 1912.

penalty. Fraternities gather to themselves, under promise of mutual protection, swearing oaths of allegiance, where infraction causes speedy expulsion.

Who of you have heard or have seen a member of this Society expelled, much less censored for violating the laws that govern this body? A practitioner told us that he would like to apply for membership, but would not for the reason that he could not get the fees prescribed in the fee table adopted by this Society.

There is not a member of this body who does not believe that we need enforcement and change of laws governing us. To say this may bring contempt to him who dares say that you are not practicing what you preach. It is this indifference that makes us careless in our acts, and makes a failure of those things we intend to accomplish, and we must stop it.

From a pecuniary point we are in a deplorable condition. There are few men who do not belong to some fraternal organization, which offers to its members a free doctor. The physician who accepts such an appointment is usually a young man, who gladly consents for the advertising he gets out of it. He in turn is succeeded by a new recruit, and on and on. doctors do this work without proper recompensation.

Cheap insurance companies exist and take business from legitimate channels of insurance. Pay full commission to agents and pay the doctor \$1 for a complete examination, with a written report and a chance to become the family physician for another dollar, for six months' professional care.

The old line will pay \$5 for less work and no contingencies as to family practice. As long as there are doctors willing to do this for \$1, why should the old-line insurance companies pay more, which has been answered by the companies, who say they have no confidence in such cheap work.

We have it in our power to stop this sort of business, for the fees adopted by this Society, to which we all agree, say that we will charge a minimum fee of \$10 for a written report, and a minimum fee of \$2 for urinalysis. We have members who are doing this for \$1, and who of us have ever charged the adopted fee?

We do not like to be always scoring this Society for its misdeeds. The excuse is that we are not what we should be, and particularly indifferent to those things most vital to ourselves. But when you go from home to home and people tell you about the lodge doctor, or a member of your own Society, who kindly charged half the ordinary fee because they were members of the same church or else had so much expense that the doctor cut his bill.

Do you know of any contractors cutting down a doctor's expense because there was not much sickness? Would you dare ask a union laborer to work for you outside of regular hours or reduce his expense account because there was not the usual amount of work?

How often have we congratulated ourselves that our condition is not like that of the old world, or as in England, which has imposed on our

profession through legal enactment so burdensome that the members of the British Medical Society have agreed to refuse to conform. This condition was brought about by the cheap lodge doctor and the contract doctor. It grew in popularity. Sweet charity to the suffering gave it a sweet ring, until it was made a political, a national problem, while it is here a local one. It appealed to the government as a stupendous help to antedated and poor suffering mortals. No one dare condemn it without the risk of being called selfish and indifferent to humanity, not public spirited; and it was such methods as we are meeting in the contract doctor that has made the British doctors a class of professional paupers whose substance has been taken away.

The cost of schooling and of living has been increased. The wages of every class have been advanced in England. Dock hands had sense enough to organize and receive more pay, better board and better sleeping quarters. Everything in England increased in 1912. Preachers, lawyers, clerks were paid increased salaries, while the doctors were reduced to below living wages by government action.

Peoria is full of fraternities, lodges, societies and schools with free doctor service; so that thousands have learned how to get free medical advice. Not only children are growing up to believe it the duty of the doctors to give freely of time and advice, but adults are alive to the fact that medical bills can be obviated by joining various clubs or some religious society.

A doctor cannot make a charity call, make inspection, etc., without closing his office. Was such an imposition asked of a merchant or banker or other business house you would receive a curt refusal. "Sow to the wind and reap the whirlwind." It is right to care for the poor and distressed, but wrong when flagrantly flaunted as a means of increasing business that would be more appreciated when paid for. Do you not value your possessions according to their cost?

We know the immense good that would come from school inspection. The benefit of early discovery of imperfections and disease. But to ask us to do this without remuneration is wrong. It is not the magnanimity of the heart that prompts this. It is the desire to increase popularity. Perhaps you do not care to make inspection and follow the adopted custom of waiting until you are invited to treat disease, charging the fees adopted by this Society, while I go to the schools, lodges, etc., and receive no pay for my work. I take your patient from whom you would have received a fee. I get nothing, you get nothing. The patient is made to believe that this is charity and that doctors are missionaries. This practice grows. It is popular among the laymen. Talks good. A great wave of reformation seizes the community. A bright idea comes to an aspiring politician and elects him on the promise of free medical attention for the poor; state protection to all, the cripple and those in your employ. He is elected. Free treatment becomes compulsory, furnished by state doctors under cheap contract. Some of our members do contract work, which is most decidedly wrong. To do this kind of work does not increase the amount of surgery. There is just so much to do, though the

young may imagine that by underbidding he may get a contract that will give him experience and increased acquaintance. Possibly this may be so; but what is to be done with the renewal of the contract, underbid by a new recruit to our profession, while you are left on the "high and dry," spending the remainder of your time howling about cheap doctors, no business and no money, which condition you created? Every employer of this city will need a surgeon in case of accident. He must have a doctor. It is not a question of cheapness, but how quickly can a doctor be had. Why cannot this body of intelligent men see the point and see that for such business we receive just remuneration? Take for illustration the brick mason or plumber of our city whose bid in contract work is not accepted until the local unions have endorsed it and the percentage divided among all competing shops.

Does this look like the noble profession of intelligent men, who like members of this Society sign contracts to render surgical aid and after-care, for one year, giving away one-third of their time, for a large corporation of over 13,000 employees, at a cost of less than \$1.25 per man, all of whom are engaged in hazardous employment? Gentlemen, think of it. Think what it means to care for one individual one year for \$1.25 and furnish after-treatment. Suppose these doctors do get \$1.500 for their work. It is only a few months until there is to be a renewal of this contract and we know they will have some sharp competition. The game is on and one year from now let's hear the cry of low fees and no honor among the members of this Society. This condition is rapidly leading to state regulation of doctors' fees, the same condition as now prevails in England, where doctors must make visits for two-bits. This condition was first demonstrated in England by the cheap lodge doctor and free clinics. The same is being demonstrated here, and while the demonstrators of England are reaping their reward, you will reap yours in the same manner unless the medical profession of this country does something.

Right here in this Society is the place to correct this evil, for all are most concerned in local conditions.

The Peoria City Medical Society may as well lead as to follow. We have men of most excellent ability, men who are leaders and thinkers. Why should we permit the established principles and usages of this medical body to be ignored and broken? Do not say that it cannot be helped, for it can, and is being done by bodies of men no better than ourselves.

McLean County Medical Society, of which Bloomington is the county seat, has already unanimously adopted resolutions in which it agrees to sign no contracts for medical or surgical relief. Let's do something here.

We have had several contracts presented to us, one of which I read:

KANSAS CITY, Mo., Oct. 19, 1912.

Re-Peoria Artificial Ice Co., Peoria, Illinois

DR. W. R. ALLISON, PEORIA, ILL., *Dear Doctor:*

Our subscriber has recommended your services in case of accident at above mentioned plant involving injuries to any of their employees.

We are pleased to advise that we are favorably considering the recommendation, and enclose herewith for your consideration our Fee List, both copies of which we should like you to sign and return to us for approval.

This list is designed to cover all services in connection with each accident, and we believe you will find that the allowance suggested is equitable and fair, inasmuch as a very liberal allowance is made for the minor injuries, which are in the majority.

We should like to place your name on our list of accepted surgeons and, therefore, trust that the schedule will be signed and returned to us at an early date.

Yours very truly,

BRUCE DODSON, Manager.

CASUALTY RECIPROCAL EXCHANGE, BRUCE DODSON, MGR.

Sharp Building, Kansas City, Mo.

SCHEDULE OF FEES—FULL MEDICAL AID

Which the Exchange Agrees to Pay and the Undersigned Physician Agrees to Accept for the Treatment of Injured Employees of Subscribers at the Exchange.

Minor Surgical Operations—

Contused, incised, lacerated or penetrating wounds, burns, scalds, etc. . . \$ 3.00

Amputations and Excisions—

Amputation of one or more fingers or toes.....	10.00
Amputation of leg, foot, arm, forearm or hand.....	35.00
Amputation of leg at hip joint.....	40.00
Amputation of arm at shoulder joint.....	40.00
Amputation of leg at thigh.....	40.00
Excision of shoulder, knee, elbow, wrist or ankle joint.....	30.00
Excision of hip joint	40.00

Fractures—

Of bones of hands or feet	7.50
Of rib or ribs	5.00
Of fibula	7.50
Of scapula, arm, forearm, clavicle, patella or jaw.....	25.00
Of femur, tibia or both bones of leg.....	25.00
Comminuted fracture of arm or leg.....	35.00

Dislocations—

Of bones of hands or feet or jaw.....	5.00
Of shoulder, elbow, wrist, knee or ankle.....	15.00
Of hip	25.00

Eyes—

Removal of foreign bodies from eye.....	2.00
Enucleation of eyeball	20.00

Miscellaneous—

Ligature of artery (not in open wound).....	25.00
Trephining of skull	30.00
Catheterization	2.00

Instruments, anesthetics, splints, medicines, dressings, or anything necessary for the performance of any operation, or for the treatment of injuries, will be provided without extra charge.

When assistance is necessary, one-third of the above rates will be charged for such assistance; the charge for assistant in administration of anesthetics shall not exceed Five Dollars (\$5.00).

Services not enumerated above shall be charged for at proportionate rates.

Dated at this day of 19..

CASUALTY RECIPROCAL EXCHANGE,

Manager.

Physician.

Some one in Peoria has signed this contract, and I read my reply to this agency that the doctor of this Society may know he has been played for a sucker, and that he must give treatment for the period of disability for less than should be charged for first aid.

To the Casualty Reciprocal Exchange, Kansas City.

If you are looking for a surgeon, one who would endeavor to render services for a remuneration that would warrant him to give honest and equitable treatment, where services are paid for according to their value, then I would be pleased to receive your appointment. The fee table you have enclosed is a contract absolutely unworthy of a surgeon's signature. As business men, you know this and would not sign it. If I was your surgeon I would expect to do honest work and defend it. This contract expressly asks me to assume responsibility and do work wherein there is no pay or remuneration. You know this and think more of me for refusing to sign it.

Why can we not have the cooperation of all members and stop this existing evil?

Can you name a trade or profession that has not increased its demands for more money for its services? There is one exception—the medical profession. It is trying to see how cheap it can labor while educating the public how to dispense with its services. Afraid to ask for their pay lest the patient thinks it excessive.

The patient is not afraid to call you at any hour, for they have been told that you can be bluffed out of half of your own and afraid to ask for the other half.

What do you think of some of our large retail houses having a store physician, paid by the year, under contract? We are solicited to buy of such houses, whose medical and surgical business is closed to us because of the willingness of our own members forgetting their honor and becoming the cat's paw for commercial agencies whose chief profit is their ability to find medical men gladly, or ignorantly, to assume medical and surgical care for less than cost and production.

When an insurance company has a contract signed by a cheap surgeon, then the company can cut below its competitor. Of course, the insurance company never loses anything and pays good dividends earned by employing missionaries for doctors.

None of us will object if such receive full and just remuneration for services rendered. But if this appointment is held because of other inducements that cannot be measured in dollars but by trickery, then let's call for some one to bring the nigger out of the wood pile.

Don't say you won't trade at such a place; don't do that. There is a better way. What about being house physician for theaters, ball parks and railroad surgeon for passes, working for nothing and taking it away from him who would get a good fee?

If this lax, non-business method of getting business really was of benefit to the young doctor who is eager for employment, then we could not say much; but to see a doctor pursuing such methods is medical suicide.

He finds himself with a clientele which is all charity and not self-supporting. This brings the doctor to a low rating in his medical society. He is known as a cheap doctor, necessarily a cheap producer, who cannot

take advice, but must try such methods of getting business. We can point you to a score of good men who realize too late their mistake; who were forced to go to new fields and start anew. Why do doctors insist on a reduction when you can get a full fee? Answer that. If I will stop cutting fees and doing contract work, then one does not have to get my business by reducing his charges. If he gets my business because of ability and worth, I must, and will, honorably concede to superiority. If you consistently subscribe to an agreement in which you expect me to be honest and fair, and I am a violator of those things we promised to keep and obey, then why should you expect me to be honorable in anything? If you are to live according to principle and will do so because of principle's sake, and I do not, and you tolerate my acts and I am never called to do my duty, then of what use is this medical society to you and me?

Is there an organization existing, much less a head of department, that has no laws to govern them? Then, again, how long would business continue if each was a self-constituted committee to do as they pleased? If such a condition did prevail, why should there be a head, such as president, business manager, etc.? All would become reckless and unprofitable because of poor or no management. If such would sell below a safe profit, and for want of agreement competitors would meet these prices, it would demoralize business of all kinds and reduce to financial poverty all those engaged in it. Does this not apply to us in every respect, and do we not need to be taught business care of our own interests, just as the commercialist looks to welfare of profit and loss? Is not a paper of this character of more importance to us than one dealing with some phase of disease? If it were possible for the essayist to announce a new cure for disease, then with what avidity all would seize hold of it. Do you not spend time and money at home and abroad that increased knowledge may be more effective in our profession, so that a good name may increase our business and bring in more dollars? Why are you so intent, always a live wire to all this, and then when it comes to the reward due you and those depending on you, cut each other in financial ways—using deception and unprincipled acts? Why should men of the highest types of trades and allied interests be increasing the price of labor and product? Why should doctors be indifferent while the coal miner makes his \$5 to \$7 per day, and if injured the employer must pay the doctor and must reimburse the miner for loss of time, while the doctor pays more for coal, more for rent, butter and eggs, and gladly agrees to attend the miner for \$1 per month?

When it comes to business acumen, can you find anything in frenzied finance to beat this outside of a dime museum or insane asylum?

When you deplore the British doctor making calls for \$0.25, paid for by state regulation; then in a land of high wages, whose salaries are so high that economists marvel, to whose shores people flock because of unbounded opportunity, behold the noble doctors of medicine, living in the second largest city in Illinois, and putting one over Old England by contracting to do surgery in a hazardous factory and attend to after-

treatment for not \$0.25 per visit, but less than \$1.25 per year, and let the calls be as many as the people desire, no matter what the character of accident may be, all for \$1.25 a year, and afraid they are going to lose this contract through a competitor who thinks he can do it for \$1 a year.

Many members of this Society are in one way or another infringing on the interests and purposes of this organization. We might recall more to verify this, and have presented this subject that we might have a liberal discussion, out of which, perhaps, a remedy may be found.

The result of past experiences convinces us that man cannot exist alone, but must combine. Wisdom has prescribed laws to govern the vicious and uninformed. Intelligence will be quick to see the light and apply the remedy. Education will continue to be the builder of better methods and broader views. These attributes of man have proved the necessity of laws, while ignorance or viciousness believes in law in so far as it applies to others, and ignores it when it becomes restraining to self.

As members of this Society we are subject to its rules and regulations. These laws were enacted for our good, and if any part of them are to our detriment let's repeal them and then together live true and loyal members.

Make it easy for all the doctors of medicine in the county to become members. They will gladly join when this Society becomes what it represents itself to be.

We are technically adherent to the law in the reception of new members, and scan the conduct and life of all candidates until they become members, after which nothing is said or done more than quiet tips, from one to the other, about some dodge of getting business.

If my shortcomings or wanton defiance of known law was presented as a charge and I were found guilty and expelled, it would be of immense good to the Society and all other sinners be likewise dealt with.

Why this is not the case and why this exception we cannot say. Is it possible we are all under suspicion? Then where is there a Moses to lead us out of bondage?

When we see the perfection in details of immense organizations and understand that this makes the organization strong, with big dividends, and then turn to our City Medical Society to ask an agreement to be made between us, you say it cannot be done. It is not that it cannot, but that we do not know how. That implies ignorance, and if that is the reigning king, then let's wake up and look for knowledge to the servant girl's unions or the hod carrier's union, who have agreed and make us come across. When strikes are brought about, made so stupendous as become questions of national importance, the cause of which was a contention over a quarter of a cent on each garment, should we not take an accounting of the small details and align ourselves with the commercialist? See to it that we do not conduct a business at less than living prices, and object to the tendency of less and less for our labors, until like the English doctor, who too late have agreed to refuse to accept the fees prescribed by their government, only to find the people will organize to enforce state right and compel the profession to accept what they taught the people to ask.

We must teach the laity and ourselves that good service by good men cannot be rendered for cheap fees. Supply and demand, as well as cost of production, apply as much to us as to any product used by man, and when sold below cost usually means that it is out of style, and who wants doctors who are out of style?

This Society is a component part of the State Medical Society, and on payment of annual dues entitles each to membership in both bodies, *THE JOURNAL* and protection against malpractice. But this is not all, for the organization has a greater use, and that is in bringing us together in our local Society, to enjoy the freedom of debate, where we come for help, and the fact that you are a member of this body should make us more careful in our attitude to each other.

Suppose that each of us would be as faithful to the prescribed laws and obey them as explicitly as the agreements existing between our retail stores, or even among the employers of our various industries, who stand together, demand and fulfil to the letter the rules and regulations governing them? How often have walkouts occurred because employees would not go beyond a rule, and had the unanimous support of allied members to uphold them and upheld by public opinion.

Do we act in this wise? No. And it seems that we rather take delight in the plight of a troubled brother and remain inactive when he might have had our help.

By holding up our brother, we hold up the standard prescribed by our Society and help ourselves much more than to have gloated over a downfall.

We might write about this until the "crack of doom" and that would do no good. Its action requires the enforcement of our rules and regulations, a few trials for subordination and expulsion before the full force and good will of this Society attracts good men to join it. Prove to the medical profession that there are benefits to be derived from membership in this body. Unite on some standard and live it. Inject a business method and follow it. Show by our acts that the men in this society support each other, act on the square, expel the law-breaker and then this society will be the controlling factor of this county, and then resolutions adopted will become a part of us, then we will see that we have just begun to do what commercialism has found essential for successful business.

As a medical society pay more attention to our financial interests. Establish our own clearing house through which we may know who are charity, dead beat or good pay. Unite in this, and all give some time to make it a success. Establish a better system of meeting the new conditions as they come.

Your butcher and grocer have done this. They shame us with our ante-dated methods. They make you and me conform to their adopted scales of high prices. They found no trouble in getting together and you cannot find any of them breaking away.

Do you know that the gardeners of this city meet on Monday evening to fix the prices for the coming week, and as a result we pay a living profit so that the gardener has a good business?

So have we met and resolved; but afraid to enforce what seemed the wisest course. We should not consider the competition or laxity of those who are not members until we first can say: "Join us, help us to better fees for our labors." When you can say that members of our society stand by each other, support each other, are doing good work in our society and enjoying better financial incomes, then those who are not members will gladly come to us to enjoy our increased profits with increased protection.

The compensation act has made the employer of labor solicitous of insuring all employees and let a trick contract to some unthinking doctor who will find he has agreed to treat the injured throughout the period of disability for about one-half the fee he should receive for first aid to the injured. Can any one tell why we should charge the insurance company less than our friends and fellow men? If some of us refuse to sign contracts of this kind, and others do, in open violation of the rules of this society, then why not deal with such as do other organizations; but let us be more intelligent than they who take away your eard, impose fines and black list, for we are supposed to be men of education, far seeing and reasonable creatures, who, when shown that no other method yet devised is better than the laws adopted by this society, obey them because they are right. If the blind cannot be made to see and yet attempt to lead us, then as a matter of self preservation we must see that the blind do not lead us into the ditch of despair.

A METHOD OF OPERATION FOR THE RADICAL CURE OF ENTEROPTOSIS WITH A PRELIMINARY CASE REPORT OF 100 PER CENT. CURED *

ROLAND HAZEN, M.D.

PARIS, ILL.

Charles Darwin demonstrated the fundamental principle that adaptation of structure and function to changed conditions is less perfectly accomplished in the female than in the male sex. Enteroptosis is a condition which is especially common in our women patients. Let us see what Nature has done to preserve the anatomical relations of the intestines as adapted to the upright position assumed by man.

The small intestines are provided with an ample mesentery, and, with the exception of the duodenum and of the terminal portion of the ileum, they are and should be free to move about *ad libitum* throughout the abdominal cavity without interference with their functions.

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

The large intestines, however, present a different plan. The ascending and descending colons are normally, intimately and securely attached to the posterior abdominal wall; whereas, the transverse colon is swung between these portions like a hammock suspended from two posts. The upper ends of these posts are provided for the support of this hammock by their especially firm attachment to the posterior abdominal wall above and, by the hepatocolic ligament on the right and the phrenocolic on the left side. If the ascending or the descending colon becomes prolapsed or their upper ends become displaced toward the median line, the transverse colon will necessarily sag down to a lower level. The mesentery of the transverse colon permits of more or less freedom of motion, similar to that of the small intestines, it being a nutritive connection with, rather than a supporting structure for the bowel. When it is called on to bear the weight of transverse colon unaided, it becomes stretched and elongated. It is evident thus that the integrity of the colon depends on this secure attachment of the cecum, the ascending colon and the descending colon. In the upright position, a strain is put on these attachments which is *not* present in the animals, which assume a horizontal position.

The cecum presents the largest diameter of any portion of the colon. The contents of the small intestine pouring into it cause it to serve, more or less, as a reservoir and subject it to considerable extremes of weight bearing. The force of gravity operates against its easily evacuating itself. These factors necessarily throw considerable strain on the mainstay of the colon attachments on the right side. Little wonder if these attachments should occasionally fail to be equal to their burden and the colon become prolapsed.

In addition to the fundamental deficiency in the female as compared with the male in her ability to meet this adaptation to the upright position, we have the factors of the more roomy pelvis and the less roomy upper abdomen, which tend to determine an inter-abdominal tension, which tends to force the colon downwards.

A bowel normally attached by an ample mesentery as the small intestine and the transverse colon, cannot be seriously disturbed by having its mesentery extended to the full, or even somewhat stretched. The cecum, ascending colon and descending colon, on the other hand, represent fixed points of attachment of the colon. Let these attachments be insecure from whatever cause and we will have the first link in the chain of enteroptosis. With the descent of the ascending or descending colon, or both, the transverse colon, which is suspended between them, necessarily descends. The omentum, in conjunction with the colon, encloses the small intestine from above as a tent folding over them. Everything goes down together.

I wish at this point, therefore, to emphasize my conviction that the cecum and ascending colon, and less frequently the descending colon, are the organs to which we must look in order to explain the existence as well as the symptomatology of enteroptosis; and consequently the points to which we must direct our surgical assistance if anything radical is to be attempted toward the relief of these patients.

In the development of the intestine in the embryo, we must recollect that the intestinal tract starts as a straight tube, which soon develops an anterior loop. This loop then twists on itself, so that its lower limb, which is destined to become the colon, passes upward on the left side, then across to the right side in front of the formerly upper limb, which is destined to become the small intestine. At this stage, we have a descending and a transverse colon, each being attached by its mesentery to the median line. At birth, the development of the colon has not extended much beyond this point. The formation of the ascending colon and the locating of the cecum in its normal position occurs after birth by a continuation of the growth of the colon with its extension downward.

The mesentery of the ascending and descending colon, which is originally attached only in the median line, comes to lie in close apposition with the peritoneum of the posterior abdominal wall, when these organs assume the positions which they are intended permanently to occupy. The mesothelium of these apposed surfaces disappears and is replaced by connective tissue and the formation of fibrous fasciculi which unite the colon with the underlying fascial tissues; when the obliteration of the mesocolon and the fusion of the colon to the posterior abdominal wall is complete, the normal support and retention of these organs is procured. The transverse colon retains its mesentery.

Now, it is seen that the descending colon from the beginning has been placed in the position which it is to assume in adult life. Its early and complete fusion with the posterior abdominal wall is thus assured. As a matter of clinical fact, we rarely see left-sided coloptosis alone.

The full development of the ascending colon, however, being delayed until after birth, its fusion with the posterior abdominal wall will necessarily be subject to more or less interference, and the risk of failure. Piersol states that in one-third of all individuals there is more or less of a mesentery formation persistent at the cecum and the lower part of the ascending colon. Thus, embryologically, we find that here is a weak point in the integrity of the colon attachments. The fact is of fundamental importance in accounting for the great frequency of the condition of prolapse of the cecum and ascending colon—an insecure cecum and ascending colon from birth—the starting wedge for the development of enteroptosis. The wedge started, it is a short step for the cecum to become prolapsed over the brim of the pelvis, as a result of pressure from above or relaxation of the interabdominal tension. The train thus started, the ascending colon, hepatic flexure, transverse colon, etc., in time become undermined at their attachments and enter into the prolapse.

In the normally developed and fused ascending colon, we find it devoid of peritoneum at the posterior one-third of its circumference, which space is occupied by connective tissue and fibrous fasciculi, attaching it to the fascial layers of the posterior abdominal wall. It is also attached to the kidney, duodenum, pylorus, stomach, bile ducts and liver.

Longyear has described a bundle of fibers which he terms the "nephrocolic ligament," which pass from the perinephritic fat downward like the

ropes of a balloon passing down to support the basket. These fibers disperse in the retrocollic tissues and become attached to the retroperitoneal portion of the cecum and ascending colon. By means of this attachment, he demonstrates that floating kidney is invariably caused by ptosis of the colon; the kidney being pulled down by the colon through the agency of these fibers. Whether these fibers are normal anatomical structures in the unprolapsed bowel, has been questioned. That they are present in floating kidney, I am able to verify by a personal experience in three cases in which I have used Longyear's method to retain the floating kidney and descended colon by means of this structure.

In all cases of prolapse of the ascending colon that I have encountered, I have found the development of fine fibrous fasciuli, which are not found in normally attached bowels. They are so distinctly a part of enteroptosis as to constitute a lesion, and merit separate description. From their physical properties, I know of no better way to depict them than to speak of them as "peritoneal threads." They appear in and on the surface of the peritoneum of the outer side of the mesocolon. (A prolapsed colon necessarily has a mesocolon.) They run diagonally from the peritoneum of the lumbar region downward and forward to be attached to the outer aspects of the bowel. They form a striking contrast with the normal peritoneum, as they present a bright red appearance. In passing the finger over the peritoneum in this region, they present the feeling of very tense, fine, silk threads embedded in its surface. Similar fibers can be felt in the deeper structures of the mesocolon. The number and extent of these fibers varies in different cases. There may be but a few, especially at the upper part of the ascending colon, or the whole outer aspect of the mesocolon, from the cecum to the hepatic flexure, may be composed of a mass of these structures. They do not appear on the inner side of the colon, nor on the transverse colon. When the descending colon is prolapsed, they are also noted on its outer surface. The constancy of their presence, their activity, as evidenced by their fiery redness and their anatomical location, suggest that they are a conservative process of Nature, being the result of Nature's effort to restrain the bowel and compensate for the damages being done through its faulty position and unnatural freedom of motion. If this supposition be correct, we have a valuable clue to the correct mode and location of attack, in the radical cure of enteroptosis. Surgery here, as elsewhere, learns its best lessons through the study of nature's effort to cure.

In addition to these "peritoneal threads," we find in some cases a second class of new tissue formations, which appear to be closely aggregated groups of fasciuli, similar to them, though growing on the peritoneum rather than in it, in the form of distinct bands of adhesions. These bands are found at more or less definite locations, all of which may be regarded as subserving the same function, of support and retention of the colon. That most commonly encountered is in the meso-appendix. It binds the appendix at its base and sometimes a considerable portion of the organ, together with the cecum, to the brim of the pelvis. A similar band is encountered at a point from an inch to an inch

and a half from the cecum in the mesentery of the ileum. It has been described by Lane, and on account of the distortion it produces in the lumen of the ileum, the latter is spoken of as the "Iliac kink" or the "Lane kink." The traction of a prolapsed cecum would naturally throw considerable strain on the mesentery of the appendix and that of the ileum at these points, and it is not unreasonable to regard that Nature has thrown up this hyperplastic resistance to this strain.

On the outer side of the lower third of the ascending colon may be encountered a similar band, often three inches in width, passing from the lateral aspect of the parietal peritoneum downward and forward, to be attached to the outer and anterior surface of the colon. When this formation, which is known as "Jackson's membrane" is well developed, the bowel, through its contraction, is rotated outward and is irretrievably held in whatever state of prolapse or distortion it may have assumed.

A similar new formation is also found at the hepatic flexure of the colon, the fibers of which pass upward in various stages of development; first extending only over the duodenum, then following up the course of the bile ducts, then up to the under surface of the gall-bladder, and in marked cases forming a distinct membrane as wide as your hand, extending along the under surface of the gall-bladder clear to its tip. One or more or all of these formations may be found in any individual case of prolapse of the ascending colon.

I shall not go into the symptomatology and diagnosis of the condition to any length. It is evident with these pathologic and anatomic connections, a varied symptomatology is to be expected, even in the early stages of prolapse. The diagnosis of chronic appendicitis, ovarian trouble, biliousness, gall-stones, gastritis, neurasthenia, etc., have usually been made by various physicians in these cases. The fundamental general features of the symptomatology is that the patients had never been really robust when young. Local disturbances in varying positions throughout the right side of the abdomen, the vague definition of which has resulted in confused diagnoses, appears after the patient has reached maturity. Abdominal pulsations where the transverse colon has separated from the stomach are noted by the patient in nearly all cases. As the condition develops, the patients become more or less incapacitated for physical labor.

Acute, afebrile attacks indefinitely diagnosed, as appendicitis, gall-stones, etc., appear at recurring intervals. The diagnosis is usually made without difficulty when one is trained to look for this condition, and its presence is encountered with amazing frequency, when it is sought for. Even in the young adult with firm abdominal walls, the abdomen is prominent below the level of the umbilicus, with a decided hollow above, in which the pulsations of the abdominal aorta are plainly visible. In the relaxed type of general enteroptosis, there is no special difficulty in making a diagnosis. The diagnosis, if in doubt, can be substantiated by inflating the colon by means of a rectal tube and an air pump, when the outlines of the entire colon and cecum are plainly distinguished by inspection, palpation and percussion. Most exact information can be had by means of an x-ray photograph of the colon, containing bismuth.

TECHNIC OF OPERATION

The method of operation which I propose for the radical cure of enteroptosis, is based on the above knowledge of the part played in this condition by the ascending colon chiefly, and the descending colon. The fundamental feature of the method, therefore, consists in the accurate replacement of these organs in their normal positions; the obliteration of their mesocolons, and the securing of their firm fusion with the posterior abdominal wall, thus reproducing Nature's plan of the normal anatomic support of the colon as a whole. This is accomplished by a definite technic. This step having been completed, all accompanying relaxations of the abdominal wall, transverse colon, stomach attachments, etc., are then attended to, being corrected by the various methods of overlapping pexies, plications, etc., that seem best adapted to each instance. In the primary stage of enteroptosis, at which time these cases should be recognized and corrected, and in which we have simply a prolapse of the cecum and ascending colon, with the descent of the transverse colon, the most satisfactory opening can be had through an incision along the outer border of the right rectus muscle, with its center opposite the umbilicus.

On opening the abdomen, the exact position the bowel assumes is noted. Its reduction to the normal position is attempted, and the degree of secondary relaxation and elongation of the transverse colon, and especially its mesentery, which is usually present to a certain extent, is noted. Adhesion bands, above described, often prevent the proper replacement of the ascending colon, in which case they should be freed at this stage. Adhesions to the appendix should be divided so that there is no constriction of the colon, and the appendix removed. Lane's kink, if present, should be divided, freely liberating the bowel involved, or removed entire. The method of treatment of Jackson's membrane, if present, is a point which is not definitely determined. The membrane can be dissected off of the bowel without difficulty, and is the method of choice in cases in which it has constricted and distorted the bowel to a considerable extent. This has the objection of leaving a considerable area of colon denuded of peritoneum, which results in adhesion of this portion to the parietal peritoneum, with which it comes in contact. Adhesions of this nature, however, are not essentially harmful when the bowel, thus immobilized, is in its normal position. On the other hand, this membrane may be simply incised at its junction with the parietal peritoneum, thus freeing the bowel and leaving the membrane to act as a peritoneal cover. A ribbon of adhesion extending from the hepatic flexure to the gall-bladder should be separated both from the gall-bladder and from the colon and removed entire.

The bowel, after this preparation, is now ready for the application of sutures. The "peritoneal threads," which course through the outer layer of the ascending mesocolon, are retained and are utilized for the support of the bowel. The hepatic flexure is replaced to its normal position as it courses over the lower pole of the kidney, and after noting these points of contact, it is drawn out into the wound again and a catgut suture is inserted into the outer portion of its mesentery, just at the edge of, but

not including the wall of the bowel. The peritoneum with as many of these "peritoneal threads" and fasciculi in the deeper portion of the mesocolon as can be gathered up, are caught within the stitch. The needle is reinserted several times in the same manner in passing it on to the peritoneum of the posterior wall. In the latter position, the needle is inserted deeply enough to include the underlying fascial layer. When the point noted over the lower pole of the kidney is reached, the ends of this suture are clamped and put aside to be tied later. Similar sutures are inserted parallel to this and at intervals of about three-quarters of an inch apart from this point on down to the cecum, taking care all the way along to catch up the fasciculi of the mesocolon, and at the posterior abdominal wall, the lumbar and perinephritic fascias above and the iliac fascia below.

The ureter is well toward the median line and while completely out of reach, should be kept in mind while entering these sutures. The blood and nerve supply of the colon are in some danger of inclusion in the sutures, though their location is plainly seen just beneath the peritoneum of the inner surface of the mesocolon and can be readily avoided. The sutures thus placed are now tied, bringing the bowel to its normal position, and apposing the mesocolon to the posterior abdominal wall. Firm and permanent union is assured by the involvement of the fibrous tissues, which are included in these sutures.

The transverse colon usually shows more or less relaxation and elongation of its mesentery, which results in the persistence of its sagging downward to some extent. This elongation is now corrected by catching up the peritoneum of the under surface of the transverse mesocolon with a catgut suture, which is reinserted in a running manner from the edge of the bowel down to the root of its mesentery. Several of these sutures are placed and tied parallel to each other until the sagging is corrected and the transverse colon assumes and retains its normal position.

This suturing cannot be expected to exert any powerful restraining effect on the transverse colon, as it does not involve any fibrous tissue, nor is it normal that there should be any great restraining force in this structure. It is simply intended to reduce the length of the relaxed tissues and retain them in this position for a sufficient length of time to secure their proper contraction and subsequent permanent retention by the natural forces and supports after the abdomen is closed and the fusion of the ascending colon in its normal position has become established. Suture of the omentum to the parietal peritoneum is also done if the above plication does not prove sufficient to secure a good position of the transverse colon.

In the cases of prolapse of the descending colon alone, a similar procedure is indicated with the additional necessity of examining for and the correction of any prolapse or undue elongation of the mesentery of the sigmoid flexure.

If the stomach is in good position, as it usually is in this type of enteroptosis, the lesser omentum will be considerably elongated, and if it shows any tensile strength whatever, its relaxation also can to advan-

tage be taken up by several parallel sutures running through it from the transverse colon to the stomach.

In cases of general enteroptosis, in which all the intestines are down in the pelvis, the entire length of the colon is usually prolapsed. These cases are almost always associated with the relaxed, flabby and thin abdominal walls, and there is no difficulty in exploring the entire abdomen through a median incision, which should be made so that two-thirds of its length is above the umbilicus. The ascending and descending colon should then be treated as above described, firmly securing them in their normal positions. The relaxation of the mesentery of the transverse colon and the lesser omentum is taken up in the same manner as above. We may find in long standing cases that the transverse colon, after this procedure still does not seem to fit, its length seeming to be half again, or even twice as long as it should be, in which case, on examination of its walls, it will be discovered that the anterior longitudinal muscle band has become stretched and thinned out, and that the normal sacculated condition of the bowel is wanting. This relaxation is corrected by a fine silk, running stitch placed through the peritoneum and the fibers of the longitudinal band in the form of a figure eight. This eight is limited in width to the width of the muscle band, and in length should be about an inch and a half. On tying this suture, the muscle is puckered, the intestine shortened and the natural sacculations reproduced. Three or four of these sutures are inserted at intervals along the transverse colon until its normal length, shape and contour have been reproduced. If the condition of gastropptosis is also present, the relaxation in the gastrohepatic omentum should be taken up by plication sutures. In cases of undue relaxation of the abdominal wall, it is desirable to extend the abdominal incision to a lower level and to overlap the aponeurosis of the external oblique, during the closing of the wound.

CASE REPORTS

CASE 1.—Mrs. J. K.; aged 48 years; married; three children; operation March 16, 1911.

Diagnosis: General enteroptosis, entire colon and small intestine displaced into the pelvis. No portion of it extending above the level of the crest of the ilium. Stomach not displaced. Elongated transverse colon, peritoneal threads of ascending and descending mesocolon.

Symptoms: Present for years. Complete disability for past year or two. Marked gastric disturbances.

Operation: Median incision, obliteration of ascending and descending mesocolon. Plication of transverse mesocolon, plication of lesser omentum; puckering and shortening of elongated muscle band of the transverse colon; omento-ventral suspension; over-lapping of aponeurosis of external oblique.

Results, fourteen months after operation: Complete symptomatic cure. Greatly improved in general health. Perfect retention of colon in its normal position.

CASE 2.—Miss M. L., aged 35 years, single. Operation April 10, 1911.

Diagnosis: Prolapse of cecum, ascending colon, and transverse colon. Upper border of hepatic flexure half an inch above the anterior superior spine. Firm abdominal walls.

Symptoms: Weakness in right side for years. Afebrile attacks of pain in right side. Muddy complexion. Constipated. Appendix removed three years ago. Right ovary removed a year and a half ago. Both without relief.

Operation: Removal of adhesions to the old scars. Obliteration of the ascending mesocolon. Plication of the transverse mesocolon; omento-ventral suspension.

Results, thirteen months after operation. Complete symptomatic cure; pain entirely stopped; bowels regular; complexion clear; gain of 35 pounds in weight; colon retained in normal position.

CASE 3.—Miss C. T., aged 20 years; single. Operation June 27, 1911.

Diagnosis: Prolapse of ascending and transverse colon. Upper border of ascending colon two inches above anterior superior spine. Jackson's membrane; firm abdominal walls.

Symptoms: Dull pains for five years; acute afebrile attacks in the right side. Operation three years ago, removal of appendix and two years ago operation for gall-stones with negative findings. Condition unimproved.

Operation. Removal of Jackson's membrane; liberation of extensive post-operative adhesions of liver, stomach, and colon; replacement of colon and obliteration of ascending mesocolon; plication of transverse mesocolon.

Results, eleven months after operation: Has had two painful attacks, which I thought to be associated with the abuse of morphin. Perfect freedom from symptoms otherwise. Colon retained in normal position.

CASE 4.—Miss H. H., aged 18 years; single; operation Nov. 1, 1911.

Diagnosis: Prolapse of cecum, ascending and transverse colon; upper limit of ascending colon half way between anterior superior spine and border of rib; adhesion band of meso-appendix. Firm abdominal walls.

Symptoms: Weakness in right side, sallow complexion for years. Afebrile attack, diagnosed appendicitis.

Operation: Removal of appendix and adhesion band. Replacement of colon. Obliteration of ascending mesocolon; plication of the transverse mesocolon.

Results, six months after operation: Complete symptomatic cure; complexion clear; gain 22 pounds; colon in normal position.

CASE 5.—Mrs. C. C., aged 36 years, married, two children. Operation Nov. 4, 1911.

Diagnosis: Prolapse of cecum, ascending and transverse colon; upper limit of ascending colon at level of anterior superior spine; adhesion band of meso-appendix and cecum. Lane's kink.

Symptoms: Always delicate. Discomfort in right side; afebrile attacks, diagnosed appendicitis. Poor complexion.

Operation: Removal of appendix and of adhesion bands here and at Lane's kink; replacement of colon and obliteration of ascending mesocolon; plication of transverse mesocolon and lesser omentum.

Results, six months after operation: Complete symptomatic cure, bowels regular; gain in weight; complexion clear; colon is in normal position.

CASE 6.—Mrs. E. R., aged 44 years. Married, one child. Operation April 6, 1912.

Diagnosis: Prolapse of ascending and transverse colon. Prolapse of stomach; adhesion band from colon to bile ducts and entire length of gall-bladder.

Symptoms: Bilious for many years. Steady pain in right side; attacks of biliary colic with jaundice.

Operation: Removal of adhesion bands; no stones found; replacement of colon; obliteration of ascending mesocolon; plication of transverse mesocolon; plication of gastro-hepatic omentum.

Results, seven weeks after operation. Complete relief of pain; digestion better and complexion clearer than in years. Colon and stomach in a normal position.

All these patients state that they feel a strength and security in the abdomen which is new to them. They have all required alterations in their clothing to fit the changed shape of their abdomens. While a

perfect record of symptomatic and anatomic cures of this obstinate malady in six cases is a gratifying result, I am aware that the number of cases is too few, and the interval since operation too short to form definite conclusions as to the ultimate usefulness of this procedure. I feel, however, that the principles involved and the present apparent substantiation of their correctness merit the presentation of the subject before the profession at the present time.

DISCUSSION

Dr. Daniel N. Eisendrath, Chicago: Dr. Hazen asked me a little while ago to take part in this discussion. I feel that this is a timely subject, but one which was covered to a certain extent by Dr. Cubbins' paper this morning.

I do not quite agree with Dr. Hazen with regard to some of the methods of operation, because so many have given them up—I will not say useless—as hopeless. We find whenever we depend upon such an elastic structure as the peritoneal ligaments for suspension, it frequently happens that they stretch out again in a few weeks, and we have such a condition as we had before. For that reason, we have been trying to fix such floating viscera as the transverse colon, or the gastropstotic stomach, and every one of the operations has been tried, even using the omentum as a sort of hammock, and given up. At least, that is my opinion. There is only one of all these conditions in which we have a little something to offer in the way of an operation, and I am speaking now of the intestine, not of the kidney, and that is one which is covered partly by Dr. Hazen's paper, namely, the conditions of the cecum in which we have a displacement of it and of those in which we have a ballooning of the cecum. The one method he spoke of, namely, of diminishing the caliber of the cecum, is a standard method. It is one that is frequently utilized, especially in New York. A number of surgeons are enthusiastic about plication of the cecum to decrease its size. I believe this, that we are getting the cart before the horse in doing that. We are, in other words, treating the effect without getting at the cause. In my opinion the best way to explain the symptoms of visceroptosis or flat cecum is that the cecum acts as a sort of pendulum when it has fluids, and cannot pass the contents out into the transverse colon as it ought to, and it becomes chronically dilated. To this condition the name of atonic condition of the cecum has been applied. If we try to plicate, we are not getting at the cause. But there is another school of surgeons who believe that in order to get at the proper cause, the better operation is that of Wilms, and this operation is one which I am personally testing out in a series of cases. I will illustrate this operation on the blackboard. (Here Dr. Eisendrath went to the blackboard and demonstrated the operation of Wilms.)

Dr. Roland Hazen, Paris (closing the discussion): The results with reference to fixing up the bowel have been unsatisfactory, and it was in the hope of getting at the bottom of this thing that I studied the subject and have presented it to you.

As to plication of the mesentery, the mesentery has nothing in it except peritoneal covering, and that cannot hold. The suturing of the visceral peritoneum to the parietal peritoneum does not involve any more than this, that you may get more adhesions after operation or inflammation. Nature has given us a cecum that is distensible; it is the largest portion of the intestinal tract, and it acts as a reservoir, and to empty itself it has to work up hill. Its longitudinal muscles have to take the support to help empty the cecum; considerable strain is thrown onto it, especially in people who labor for a living and in people who are constipated. This strain comes at the upper part of the attachment of the ascending colon. If the cecum is only more or less free, the strain comes at the upper part and to get any support that will hold the intestinal tract you must have it away up in the back part of the abdomen and not at the side. There are men who suture up the cecum, who will dissect it up and put in a few stitches, but these stitches are usually in the anterior abdominal wall from here up to the ribs (indicating on blackboard); the bowel should be in the back and away over the kidney. The normal place for the colon is over the lower pole of the kidney and

to the outer side of the duodenum. That is a very posterior position, and a high position. The transverse colon being attached from in front at this point (indicating), we bring it back where it can by a good deal of stretching serve as a sort of hammock unless the mesocolon is elongated.

This whole subject is largely experimental. It is bound to be. This is a preliminary report. However, the results of the method have been so absolutely satisfactory that I have felt warranted in bringing the subject before you. Of course, it takes time, and whether these cases are going to be successful ultimately we do not know. The oldest case is fourteen months. In the first case there was a general enteroptosis, where the transverse colon was clear down onto the symphysis, and the cecum you could pull down almost to it. There was very general relaxation. The stomach was not down in that case. The colon is now in normal position.

THE ABDOMINAL CRISIS *

ALLEN B. KANAVEL, M.D.

CHICAGO

The purpose of this short paper is to urge on the profession the advisability of grouping certain diseases which early have similar symptoms and signs in a single class and considering them as a clinical entity under the title of "Abdominal Crisis."

When one advocates the introduction into medical literature of a clinical term to describe a clinical entity, I am aware that it is subversive of the principle of our profession which wisely attempts to place every clinical entity on a pathologic basis. Justification, however, may be found in the experience of every one of us since we have all seen cases pass to fatal issue because operation was delayed while the physician or surgeon was attempting to determine from what variety of abdominal lesion the patient was suffering. As a matter of fact, it is frequently impossible in the early hours of an appendicitis, gangrenous gall-bladder, perforated ulcer, strangulated bowel, and other acute surgical conditions, to arrive at more than a probable diagnosis. The practitioner hesitates to call surgical consultation, since he fears that another twenty-four hours may demonstrate that the condition is non-surgical, or may subside; while the surgeon if called is compelled to admit that one of several surgical conditions may be present, and this natural inability to make a distinct pathologic diagnosis immediately arouses in the family and friends an unjustified apprehension as to the ability of the consultant and often leads them to insist on fatal delay.

Would it not be wiser for the physician and surgeon and more satisfactory to the family if we in the early hours grouped the acute abdominal diseases into two classes: one medical and one surgical, and based our therapy on the diagnosis? In the first few hours of the attack it is comparatively easy to say that an individual case is medical or surgical, since the surgical conditions are all characterized by a single group of symptoms and signs. May we not be content, then, with recognizing

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

this group, and name the condition "a surgical abdominal crisis," under which diagnosis, consultation may be demanded and operation advised if necessary?

The positive signs and symptoms are four in number: First, sudden excruciating pain in some part of the abdomen; second, nausea and vomiting, almost always the latter; third, rigidity of one or both sides of the abdominal wall; fourth, tenderness, at least relatively localized. These must all be present for a positive diagnosis. A probable diagnosis may be made on any three. The order in which these appear and the character of their onset and course are of importance in the diagnosis. Each must be investigated discriminately. For fear there might be a misunderstanding it should be emphasized that the absence of these typical signs does not necessarily indicate that the condition is medical. Frequently an appendicitis or similar condition may begin slowly. We are attempting to show only that the fulminating surgical conditions can be differentiated from acute medical. Let us consider these four symptoms and signs in order.

1. *Sudden Abdominal Pain*.—It is essential that the onset should be sudden and of considerable severity. The old term "intestinal colic" describes its nature. Pains beginning mildly and increasing in severity slowly over several hours cannot be said to be typical.

2. *Nausea and Vomiting*.—Either of these, but more typically the vomiting, should come on shortly after the onset of the pain. It is a distinct and positive sign. It is generally of short duration only, ceasing after one or two hours.

3. *Rigidity of the Abdominal Wall*.—This is more or less localized. There is no sign that is of more importance than this. If sought for in a discriminating manner the diagnosis may often be made on this alone. Unfortunately, it is not sought for intelligently by many observers. It is essential to understand that there are two types, voluntary and involuntary, the first being produced by the patient of his own volition in an attempt to protect some part of the intra-abdominal region from the pain incident to pressure over that region. The second may be explained as due to irritation of the parietal peritoneum or the nerves supplying the wall, and in contradistinction to the first is always present whether the patient's attention is on it or not. It persists even up to the final stages of anesthesia. The importance of this distinction is evident in that a non-parietal inflammation will present the former and not the latter. We are thus able in an individual lesion to prognosticate the extent of the inflammation and the probability of recovery before operation. The rigidity is best sought for by placing the hands flat on the respective sides of the abdomen with the fingers toward the chest. The pressure should never be violent and always by the flexor surface of the fingers and not with the ends. The lightest possible pressure should be used. If a phrase may be coined, the "feather touch" would be accurately descriptive. Let me repeat that if rigidity is sought for intelligently in abdominal diagnosis, it is the most valuable sign at our command. If the niceties just mentioned are not observed, it is of no value.

4. *Tenderness*.—If tenderness is localized it of course tells us not alone that we are dealing with an abdominal crisis, but also designates within narrow limits what lesion has caused it. Early, however, we have a relative localization; i. e., the upper part of the abdomen is more tender than the lower, or the right side than the left, or *vice versa*.

As was said above, it is on these four symptoms and signs that the diagnosis of an "abdominal crisis" must depend. Of corroborative value is a slight rise in temperature and a pulse of over 110. Either may be absent early, however, since in the strangulations there may be no inflammatory reaction at first, and in the perforations, we may have even a subnormal temperature. An early pulse of 130-140 is of great importance when present, as, for instance, in an acute pancreatitis. The pulse is generally of more value than the temperature. The evident shock in which the patient may be found and the early leukocytosis in the virulent inflammations may be of value. The other corroborative findings in the history and physical examinations need not be discussed here, since we do not wish to confuse the picture of the general groups. A review of the more common abdominal lesions will show that these signs and symptoms will exclude the medical and include the surgical. They will, for instance, exclude an acute gastritis, an enteritis, a gastric crisis of tabes, the passage of stones, the pain of a gastric or duodenal ulcer, a lead colic, a pyelitis, etc., and on the other hand will include the intestinal strangulations, the perforation of gastric or duodenal ulcers, the gangrenous and perforated gall-bladder, strangulated herniæ, appendicitis, torsion of the omentum, acute pancreatitis, torsion of an ovarian pedicle and similar conditions. The passage of ureteral or gall stones, or torsion of a kidney pedicle with a Dietl's crisis may occasion difficulty in diagnosis, but even these are subjects for surgical consideration—conditions in which surgery may or may not be demanded as the individual case may require. On the other hand, one might miss a ruptured tubal pregnancy, but other signs are present which should establish the diagnosis.

No one should say that in this or that case the general rule may fail. No general rule will apply universally. Surely, when one thinks of the hundreds of lives that are lost every year through the needless delay incident to the useless attempt to say just what organ is at fault, it can be only the doctrinaire who will refuse to recognize this group of conditions as a clinical entity.

To recapitulate, we urge that in the early hours of an acute abdominal lesion, before a distinct pathologic diagnosis is possible, we may by certain symptoms and signs be able to recognize a condition as surgical rather than medical. To aid in lessening the mortality due to delayed diagnosis, it is urged that this group of symptoms and signs shall be recognized as a surgical entity to which the name "abdominal crisis" may be justly applied and under which diagnosis consultation may be called and operation performed when necessary.

These remarks must not be construed as an advocacy of the dictum "operate when in doubt," but rather of the principle, "operate when there is no doubt."

DISCUSSION

Dr. William Fuller, Chicago: The subject presented by Dr. Kanavel is one full of interest to the physician and surgeon alike. It may be discussed from three standpoints—put in the form of questions as follows:

First, is there such a class of cases as outlined in this paper? Second, is that type of case entitled to a name that will perhaps more correctly describe it, or by which we may more satisfactorily deal with it? Third, is there a better name for these cases than abdominal crisis?

In answering the first question we must agree at once that such a class of cases does exist; just as we will unite in saying in answer to the second question that some means by which we may more successfully manage these cases are greatly to be desired. In answering the third question some difference of opinion may be expressed but I know of no better term than the one chosen by the essayist.

The most up-to-date methods of studying diseases are not sufficient in a great many cases to establish a timely diagnosis; and it is in the type of case described by Dr. Kanavel that the "timely" diagnosis becomes the real point in his paper if I understand it. These cases are without clear histories often; have symptoms greatly misleading and the course of many of them is rapid and reaches a hopeless state without warning.

Every large clinic can furnish examples where the aid of the bacteriologist, pathologist, hematologist and laboratory worker, combined with painstaking clinical study fail to make clear the case in hand. If these acute and fulminating cases thus escape recognition what will be their fate when falling into the hands of less fortunate men—men without these diagnostic aids and with limited experience in abdominal surgery.

This paper does not contend for a moment that decreased effort should be the rule in studying any but the cases belonging strictly to the class named; but is brought out in contrast to methods which should apply when time and opportunity will permit. This paper does mean, however, that time wasted means a life lost and that efforts to reach a diagnosis in a certain per cent. of acute abdominal lesions has been shown by time and experience to be a futile effort. The decision to be reached then is not as to the identity of the condition, but as to whether the case in question is one demanding surgery or demanding some other treatment.

Dr. Harsha's recent article on the significance of pain shows, as many others show, how little symptoms may actually mean to us. Two cases alike in anatomic details will frequently exhibit clinical pictures so at variance with each other that widely different opinions will be expressed when aiming at a diagnosis. In instances of this kind one case may present many pronounced symptoms, while the other is without symptoms, or presents but few. No two individuals describe subjective symptoms alike and no two observers interpret them alike.

Another feature is of importance in this discussion and applies more particularly in cases of the kind here described than in the more chronic cases. I refer to the man who is to do the work when the decision is on the side of surgery. Under ordinary circumstances the average man may remove a non-adherent appendicitis, drain a gall-bladder, or deal with an extra-uterine pregnancy. But very often these emergency cases may call for some formidable surgery; removal of stones from the bile ducts, pylorotomy, gastrectomy, or resection of the intestines. Such operations are not only impossible for the occasional operator but the conditions calling for the operation may not even be recognized. Of all classes of cases of emergency surgery none will demand more strongly the work of a competent surgeon than the type of case here described.

I wish to congratulate Dr. Kanavel for bringing to the attention of this society a subject which must have appeared in some way to all surgeons. I

might in summarizing say that it is my belief that this rather larger class of acute abdominal conditions, call them what you will, recognized early enough and judiciously treated, will lower the mortality in this class of surgical work.

Dr. Clifford U. Collins, Peoria: I think it has been long recognized that the mortality of this class of cases is too high, and that is probably the reason that Dr. Kanavel brought this subject to our notice today. Why is it the mortality is so high? I do not believe it is because of any imperfection in surgical technique, because that has been brought to almost as high a degree of efficiency as possible. At least, there is not much room for improvement in that direction, so that the mortality lies in the fact that these cases are brought to the surgeon at too late a period in their development, and that is the reason Dr. Kanavel has brought this matter to our attention.

There are four points to be remembered in arriving at a diagnosis and in deciding what to do. First, a careful history of the conditions Dr. Kanavel mentioned. The history will bring out something in the previous life of the patient which will shed light upon the diagnosis. I need not dwell on that. Second, careful examination, and Dr. Kanavel has emphasized that the examination must be careful and painstaking, finding the four conditions he has named. Third, careful observation, and that I want to speak of. It is not sufficient for the family physician to see patients with these abdominal crises and perhaps give a little physic, as he is often inclined to do, and not see the patient for another 24 hours. The family physician should be in close touch with the patient, know what is going on, and how the symptoms are developing, and act quickly. Fourth, rapid application of the surgical treatment, and that means the surgeon must be brought to the patient or the patient brought to the surgeon soon afterward. It is possible that the condition is a surgical one, and very often there is delay there. After it has been decided that the condition is surgical, before surgical treatment is undertaken the consent of the patient or the relatives has to be obtained, and arrangements made to take the patient to a hospital or to take the surgeon to the patient, and usually there is considerable delay in this. If the patient is brought to the surgeon in time and surgical treatment applied early, the mortality can be very much lessened.

Dr. Wm. M. Harsha, Chicago: The paper of Dr. Kanavel is very timely. I do not know of any cases that are of more importance from the standpoint of abdominal diagnosis than the class he has referred to. He has spoken about eliminating the history in his paper. The cases are rare indeed in which we cannot benefit by the history, and we should bear in mind that certain kinds of cases are peculiarly liable to happen in patients of certain age, sex and condition. For example, let us take a case of acute abdominal crisis occurring in a young man of 22 or 23 years of age. The history is that there has been obscure stomach trouble for two or three years and possibly some anemia, and it may be doubtful whether he has ever had much pain. This should suggest to the observing surgeon or clinician a perforation, duodenal or gastric, if acute abdominal pain supervenes.

Then another item we should observe and emphasize is the importance of so-called reflex symptoms, pain and rigidity. We can only account for the wide area of abdominal pain in an acute incipient case of appendicitis on the theory of the reflexes. It is impossible to believe that a little area of inflammation in the lower right quadrant of the abdomen will cause intense abdominal pain and rigidity all over, without calling into it the reflexes. These reflexes may be relieved to a considerable degree by therapeutic measures, the administration of ether or chloroform, or large doses of morphin will eliminate almost entirely the reflexes and enable you to determine locally the place of disease or pathology. I have tried that repeatedly. I have seen cases with acute general abdominal pain clear up within two or three hours under a large dose of morphin, so that the pain was more limited to the area of the disease. Do not understand me to advocate the indiscriminate use of morphin in these cases, because we generally advise against its use, and I believe in withholding it except as an aid in diagnosis where

we believe we have a surgical condition to deal with. In these cases it is of value in abolishing the reflexes so as to enable us to get at the spot. It only takes an hour or two, we do not give the morphin and leave the patient; but watch the results, and it will aid us materially in these cases. I believe it is of great importance to determine whether the case is surgical or not. That is the main point in the paper, together with giving the name which Dr. Kanavel has designated. I believe that with a closer study, with especial reference to the reflexes, we can determine more exactly the location of the disease.

Dr. H. C. Fairbrother, East St. Louis: There is probably no subject of more interest and importance to the general profession than that of abdominal trouble. In recent years this trouble has become more important and more fearful, and more attention has been given to it than in former years. There is more fright attending any abdominal pain now, however slight, than there was in former years. In my early years of practice, about 40 years ago, there was no abdominal surgery. It was all medical, so that there was no such a thing as "abdominal crisis." That phrase is merely a name. It has no definite basis, it being understood that it refers to those cases of abdominal trouble that are surgical. As I have said, in my early practice, we had no abdominal surgery, so that all cases were treated merely as a matter of pain only, and they either got well—or died. They were not looked upon with as much alarm as they are today, I mean chiefly the fear of an operation. A group of symptoms associated with any pathologic condition does not always point out definitely that condition. That is a fine distinction referred to in the paper, that there is a certain symptom complex. There are certain groups of symptoms that indicate a certain pathologic condition, and there is no pathologic condition so frequently misspelled, I might say, as abdominal conditions. The more we go into that subject, the more carefully we study all these groups of symptoms, the more difficulty we have in spelling out the meaning of abdominal pain. With that difficulty before us in this subject of differentiating between an abdominal pathologic condition that may be considered medical, and that which goes over that line to the surgical—called an abdominal crisis—depends mainly on who the surgeon is. The tendency now in all our smaller towns is for most any young man to enter the abdominal cavity, where we might say, "angels fear to tread" (laughter), and hence we have a large number of fatalities after operation; hence the large amount of fear in the minds and hearts of the public whenever any abdominal trouble occurs.

Dr. S. C. Stremmel, Macomb: It has been my experience in the last fifteen years that in a large number of these cases such as Dr. Kanavel relates, it is impossible for any living man to make a diagnosis in the beginning of the symptoms. These cases all fall into the hands of the general practitioner, in the first place. He sees them in the beginning of the trouble, and I have seen time and again the most reputable physicians lose their reputation locally by not making an early diagnosis.

A point I would like to call your attention to is that the surgeon, when he sees the case, finds it easy to make a diagnosis in some instances at least, and it is he who should protect the man who sees the case first and explain to the family that if he himself had seen the patient in the beginning he could not have made the diagnosis himself.

Dr. Simon Peter Schroeder, Nashville: I wish to say that this paper on the diagnosis of abdominal troubles is helping us general practitioners. A practitioner may open the abdominal cavity and not expect to find what he went after. I have found this though, that between the medical and surgical case, with a good surgeon, if the diagnosis is wrong, the case will get well anyhow, if he makes an exploratory operation, and finds nothing. But if the general practitioner makes a mistake and does not diagnose the case correctly, and does not have an operation performed when he ought to, the patient is going to die. A real conservative is the man who will have an operation done by a good surgeon. With a good surgeon an exploratory operation is not as dangerous as a case of measles, while without that exploratory operation the patient is in a very dangerous position. Personally,

I feel that there is nothing more chagrining than to have an operation done when it is not needed, and I want my surgeon to protect me in those cases. If a mistake is made, it is made on the side of safety of the patient. I am responsible to the patient for a good surgeon, and when I do that I am conservative to advise in these cases an operation in accordance with the symptoms that have been mentioned by Dr. Kanavel.

Dr. Daniel N. Eisendrath, Chicago: I think this paper of Dr. Kanavel is one of the most timely and valuable ones that could be brought before a group of general practitioners and specialists, for the reason that if there is anything that is impressed upon the mind of the surgeon who sees a large number of these acute cases, it is this, that every hour, after the first six to twelve hours, means so and so many per cent. increase in mortality. In the average case of injury to the abdominal viscera we try to study whether or not the patient's intestine has been ruptured, or whether the bladder or liver has been ruptured, and by the time we make a diagnosis in the majority of cases, especially of intestinal perforation, there is no use in operating, for at the end of twenty-four hours in these cases, when the abdomen is generally rigid, the pulse high, with tympany, you may as well leave the patient alone and trust to starvation treatment or to any treatment you want.

I saw a patient last week with two perforations of the intestine. They waited until the patient had all the classical signs of peritonitis. We located the perforations, and sewed them up, and said good-bye. The same holds good in cases of acute abdominal lesions due to other conditions besides trauma. If we look at the mortality statistics we will find after the first twelve hours, and every twelve to twenty-four hours after that, especially every twelve, there is an increase in the mortality of from ten to fifteen per cent. If you wait in a case of intestinal obstruction before operating say from twenty-four to thirty-six hours, the chances of the patient are only 50 per cent. of what they would be if you operated in the first six hours. That is why this paper is of such great value. It simply explains that it is unnecessary for you to justify yourself every time, particularly after having made an exact diagnosis. There is a class of cases in this group which I wish to add to Dr. Kanavel's paper, and that is the cases of peritonitis without visible perforation of a viscus. Every one who has occasion to open the abdomen a good many times will feel chagrined if he is not able to demonstrate a perforation of the stomach, gall-bladder, or appendix to the attending physician. That is no longer a cause of chagrin, because we know there are certain cases of peritonitis in which the germs travel through the walls of the intestine and produce typical peritonitis, where you cannot see a visible perforation. This point has been recently brought out.

In regard to the signs of value, I have come in my own mind to change the order in which I observe them. A sign which to me is of the greatest value in a case of acute abdominal crisis is rigidity. If I find rigidity, I associate with that in trying to make a diagnosis other symptoms, but the first and foremost symptom is rigidity, and the manner of examining for rigidity is not by trying to poke the hand into the surface of the vertebra. That is no longer a good method, but a gentle touch is more accurate. When you examine that patient, taking a concrete case, you may find that the rigidity is limited to the right upper quadrant. If you examine the patient carefully you will find it has spread a little bit, and that is one of the best signs of this acute abdominal crisis. I am basing this on actual experience. The older signs, like temperature, to my mind are not of enough value on which to place reliance. The temperature is no longer of the great value that has been emphasized in the text books. A second sign of value, in addition to rigidity, is the pulse rate. There is no more valuable sign, after the increase in rigidity, than a gradual increase in the pulse rate, especially in those cases accompanied by peritonitis. As far as abdominal distention is concerned, or as far as waiting for it to appear in order to make a diagnosis, I will say that by the time abdominal distention appears there is no use of making a diagnosis.

Dr. James B. Herriek, Chicago: It is a splendid thing that the program has been so arranged that we get together as physicians and surgeons and so have a free exchange of views. As a physician, I should certainly endorse everything that has been said by the surgeons with regard to Dr. Kanavel's paper. It is a timely paper, and yet, it seems to me, it is well to call attention to the fact of danger that we may not all, perhaps, exercise as much care in the refinements of diagnosis as Dr. Kanavel has done. Unless we exercise this care we may easily make mistakes in diagnosis.

There are two conditions that have lately come under my observation which resemble somewhat these abdominal crises, and yet they are not surgical crises. The one is coronary obstruction. A thrombus in the coronary artery of the heart may in certain instances, when it does not produce sudden death, cause a pain high up in the abdomen, may produce vomiting, shock, collapse, some distention of the abdomen, and a moderate temperature. I believe it is possible to differentiate the two conditions, but it is important to keep such a condition in mind. And the purpuric diseases, as in purpura hemorrhagica, may be accompanied by sharp visceral crises, such as severe abdominal pain, tenderness and vomiting. The so-called Henoch's purpura may be very perplexing.

With regard to the use of the term "abdominal crisis," unless I am mistaken, that expression was employed by Pal, who while speaking in general of the vascular crises, refers to a group of abdominal crises. I think it is well, as Dr. Kanavel has said, to speak of these as acute surgical abdominal crises.

THE RESULTS OF 1,400 WASSERMANN REACTIONS IN THE MICHAEL REESE HOSPITAL*

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During the last few years the importance of the Wassermann as an aid in the diagnosis of syphilis has steadily increased until there are few who do not admit that it has an important place as a laboratory aid in diagnosis. The prejudices of many of those who previously condemned the use of a complement deviation test were largely due to improper interpretation of results, or to the use of impractical and inaccurate systems.

For the past three years, Wassermann tests have been a part of the laboratory routine of the Michael Reese Hospital. During that time 1,400 tests have been performed on all classes of patients. Of this number about 400, or only 27 per cent., of all cases were positive. The fact that a test may be ordered on any patient in the hospital accounts for the unusually low percentage of positives. Some of the attending men order Wassermann tests almost as routine, using the result to confirm the history of the case. A great many of the patients on whom the tests were performed showed no symptoms and gave no history of lues. Some of these tests were performed for the possibility of a non-specific deviation, and others for negative controls. On a few occasions, in which lues was suspected, but no definite history of it was obtainable, the presence of a strongly positive test was sufficient to change the entire history.

* Read at the Sixty-Second Annual Meeting of the Illinois Medical Society, at Springfield, May 21-23, 1912.

Tests have been performed on all wet nurses and while they invariably give a negative history, the Wassermann has been positive on more than one occasion. As many of these women are foreigners from whom it is impossible to obtain anything like a complete history, the Wassermann has proven a valuable safe-guard for the infant. The performance of a test on the child before allowing it to nurse should be insisted on in all such cases.

The chicken-rabbit system, which was introduced by Jobling, is used in this laboratory. In 400 of the tests the Noguchi reaction has also been performed and the results compared. In all but two instances the results were identical and in these two the Noguchi was doubtful, while the chicken-rabbit was negative. The system, as used here, resembles in a large measure Noguchi's modification of the original Wassermann technic. Instead of sheep's corpuscles, those of the chicken are employed. The amboceptor is the immune rabbit serum, prepared by injecting rabbits with increasing doses of hen's corpuscles. The antigen used is the acetone insoluble fraction prepared according to the Noguchi method. Both active and inactive sera are employed. By inactivation the inherent hemolysin in human serum for chicken's blood is destroyed, although this is rarely, if ever, sufficient to interfere with the tests. The presence of the inherent sheep amboceptor, one of the greatest objections to the original Wassermann test, is thus eliminated. In the active series, the specific antibody is not reduced as it is by inactivation, although heating to 54° C. for twenty minutes will not seriously affect the syphilitic antibody, while completely inactivating the serum.

It is the purpose of this paper to show some of the results obtained by the system in use, as well as the percentage of positive results which may be expected in the various stages of syphilis, and in a few of the non-specific diseases. In many instances the history was not complete enough to permit of definite conclusions about the stage of the disease. The amount of treatment, in some instances, is not mentioned in the history, and this lowers the percentage of positives. On the other hand, we must admit that some of the cases giving a negative history and presenting no symptoms may have had syphilis and still give a negative test.

Of the fourteen primary cases which were long enough under observation to make a definite diagnosis, eleven were positive and three negative. All but one of the positive cases gave a strongly positive reaction. This is equivalent to 82 per cent. positives. As this hospital does not take cases of early syphilis, the number of primary cases is necessarily small, and few of these cases were very early.

All secondary cases which still showed symptoms have been grouped together. Some of these have been under treatment for some time and a few of the negative results may be due to treatment. Ninety-seven tests were made, and of this number ninety, or 93 per cent., were positive. Nine of the cases which were given salvarsan were kept under observation for some time. In two of the cases the Wassermann reaction remained strongly positive as late as the sixty-eighth day. In all of the others the reaction diminished in intensity, becoming negative on the

eighteenth day in the earliest case and still retaining a trace of inhibitory action on the fortieth day in the latest case. The case which became negative on the eighteenth, was partially positive six months later. One case which remained positive after two intravenous injections of salvarsan promptly became negative after mercury inunctions were instituted. A third case, seen very early and receiving 0.6 gm. of salvarsan intravenously at the beginning of the second stage, has been positive and negative, according to the amount and activity of treatment, a half dozen times. Shortly after cessation of mercury, his reaction invariably became positive.

Under tertiary cases are included all cases of syphilitic orchitis, gummata, luetic ulcers of the leg and foot, and cases of cerebrospinal lues. The blood-serum in thirty-nine out of forty-three cases was positive, or 91 per cent. of the cases. The spinal fluid in two of the positive cases was negative and positive in three. This is in accordance with the observations of others who have noted that the blood-serum will frequently give a positive test while the spinal fluid is negative. The diagnosis in two of the cases, in which the cerebrospinal fluid was positive, was that of cerebrospinal lues. The third case furnished no grounds for such a diagnosis. A case of gumma of the liver has a positive Wassermann after two intravenous injections of salvarsan.

Of the parasyphilitic diseases, twenty-two cases were positive and six negative, making a total of twenty-eight cases, of which 74 per cent. were positive. The cerebrospinal fluid was positive in one of these cases and negative in two others, again demonstrating the greater frequency of the Wassermann in the blood-serum as compared with the spinal fluid.

The inability to obtain a history on many of the cases on whom the tests were performed may account for the high percentage of positive cases among the latent cases. Many times, when no history of a lesion or other symptoms was obtainable, a history of having taken treatment could be obtained. Of the twenty-four cases with data sufficient for classification, four were negative and twenty positive, or a percentage of 83 per cent. positives. Of the four cases which were negative, two had been and were at the time of the tests under active treatment.

In eleven cases of hereditary lues, ten of them were positive and one negative, or 91 per cent. were positive. In some of these cases Wassermann tests were performed on the parents, one or both, of the child, and in every instance they were found to be positive. No test was obtained on the parents of the child giving the negative result. This child has hydrocephalus, and there is some grounds for difference of opinion in making a luetic diagnosis.

It is unnecessary to go into detail concerning the many negative cases. There has been little opportunity to investigate the non-specific diseases, such as scarlatina, leprosy and tuberculosis, which have given positive results in the hands of some laboratory workers, as contagious and infectious diseases are excluded from this hospital.

All cerebrospinal and tubercular meningitis cases have been tested. By employing even many times the usual dose, we have never been able to obtain a positive result.

On account of the objection raised that brain tumors are apt to give a positive result, the records of the brain tumor cases were reviewed. Twelve cases were found in which both definite diagnosis and deviation tests were made. Of this number, ten were negative and two positive. The presence of an old syphilitic lesion could not be excluded in either of the positive cases. In one case the patient was irrational and the history was obtained through his wife. The other case, that of a woman who had never borne children, gave no evidence of lues.

As a result of the analysis of the 1,400 serum tests for syphilis thus far performed in the Michael Reese Hospital Laboratories, we have been led to draw the following conclusions.

1. The modification of the original Wassermann tests for syphilis introduced by Jobling is practical, accurate and easy to perform. Comparison of the percentage of positive results obtained by this system with that obtained by other methods shows that the method is as delicate as other systems.

2. Wassermann tests should be a part of the laboratory facilities of every large hospital.

3. Children should not be allowed to nurse other than their mother until Wassermann tests have been performed on both.

4. In this laboratory brain tumors have not given positive luetie reactions in cases where syphilis could be definitely excluded.

5. The presence of a negative Wassermann can never be taken as proof that the patient has not had lues, but positive reactions are helpful aids in diagnosis and trustworthy in the hands of competent observers.

—The Chicago Medical Society cancer committee, appointed to cooperate with a similar committee appointed by the Clinical Congress of Surgeons recently in session in New York, has issued a bulletin in pursuance of the campaign of publicity being carried on against cancer. Following are the recommendations of the bulletin:

Cancer in the beginning is a local disease.

No cure for cancer has been discovered, except surgery.

Cancer if operated on immediately, will not return.

Advanced cancer cannot be cured by surgery, hence the need of seeking surgical aid at once.

Cancer of the breast shows its first sign by a lump in any part of the breast by contraction of the nipple, or by pains under the arm.

Cancer of the stomach begins with indigestion, loss of flesh and general weakness.

Cancer of the internal organs shows itself by irregularity in their functions.

Education of the public on cancer will save thousands of lives each year, as it has done in consumption and appendicitis.

The Chicago Medical Society Cancer Committee has been made permanent and will answer inquiries or furnish literature on application.

ILLINOIS MEDICAL JOURNAL

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DECEMBER, 1912

THE CAMPAIGN AND ELECTION OF 1912

The physicians of Illinois took unusual interest in the campaign and election which has just been concluded. Probably no political campaign since the history of the country began has been so remarkable in so many ways. Never before was there so much quiet thinking, and so little demonstration, and particularly in the medical profession so much activity. A great many physicians in Illinois were particularly active concerning the state ticket. We understand that Governor-elect Dunne received scores of letters asking about his attitude on the State Board of Health matter as a result of our editorial in the October issue of the JOURNAL. Drs. Bevan and Evans, of Chicago, issued a circular letter to every physician in the state calling their attention to certain planks in the Progressive Party platform which they thought deserving of consideration by medical men.

A number of medical men were connected with the County Central Committees, several of them being chairmen. Dr. Mitchell, of Carbonale, stumped the county. Dr. Armstrong, of Taylorville, was active in Christian County. Dr. Bumstead, of Monticello, was active in Pratt County. The Editor was chairman of the Sangamon County Progressive Central Committee. The result in the state was largely due to physicians. The fight in the state hinged largely on Mr. Deneen, not because of any political party, but because of the strange attitude which the Governor had assumed on medical and sanitary matters in the state. The same

fight would have been made on a member of any other party under similar circumstances. This attitude cost Mr. Deneen at least 20,000 votes.

Mr. Dunne comes into office on the first of January with the opportunity of making a clean sweep of the State Board of Health. The term of office of every member of that body will have at that time expired. Our only wish is that Mr. Dunne may recognize the necessities of the case and appoint a board which represents the very best element of the medical profession. Would it be too much to hope that in appointing the members of this profession, he would regard fitness rather than politics? This would not only be good policy, but good politics.

As to the secretary: It seems hardly possible that Dr. Egan can continue to serve, or should ask to be continued in office when he has so forfeited the confidence and good will of the people and profession of the state. His term had already expired and he was a *de facto* member of the Board, and the majority of the Board were *de facto* members when the Civil Service law took effect. The Civil Service Board reversed itself twice before Dr. Egan was declared under the Civil Service law.

Dr. Egan was particularly active during the recent campaign, and made himself especially obnoxious to the medical profession in sending out a charge which was construed by a great many people as charging that the members of the medical profession were selling antitoxin which had been supplied to them free.

In the *Chicago Tribune*, of November 24, Dr. W. A. Evans gives the following paragraph on the situation, suggesting that one of the reasons why the people of Illinois should be thankful is that they are likely to have a new Board of Health:

"By reason of the election of Edward F. Dunne as governor we have reason to expect a new state board of health for Illinois. The Illinois Board has not kept pace with the advance in public health procedures in the last ten years. In consequence the people of this state have not progressed in the control of tuberculosis as Wisconsin has, or in popular health education as Indiana has, or seen a quickening of health activities as Michigan has. Chicago has had to make its fight for better health without the aid of, and oftentimes with the opposition of, the state board of health. Nevertheless, this body has had such a hold on Governor Deneen that it seemed necessary to oust the governor to get an up-to-date board of health. There seems a prospect of improvement in the state board of health in Illinois, and for that we have a right to be thankful."

Four county societies have already passed formal resolutions asking that the State Board of Health situation be cleared up. These are Stephenson, McDonough, Adams and Effingham. Other societies will doubtless act soon. Under all these circumstances it would seem imperative for Mr. Dunne to renovate that office as early as possible.

INDUSTRIAL INSURANCE

The following correspondence from two different Casualty companies which has been received by members and officials of the McLean County Medical Society, is published for the information and benefit of medical

men over the entire state, who are vitally interested in the matter of compensation under the new insurance act, and will appreciate the importance of the work which has been done by the McLean County Society. No doubt other societies will work along this line, and we shall be pleased to hear from them as to the condition of this matter in the various communities of the state.

BLOOMINGTON, ILL., Nov. 18, 1912.

To the Editor:—The enclosed copy of a circular letter shows the determination of these insurance companies to beat down medical fees to starvation rates. For the rates which they offer are very much below the minimum rates of any county society. In their argument they virtually say "We insurance men who are non-residents are competent to say what should be proper compensation for the work of the surgeon in Illinois," and they even try to make it appear that the law is on their side. I have had several of these propositions offered me for my signature and have declined. In its ultimate consequences this thing is so far-reaching that physicians should unanimously reject it. Would it not be well for you to again call attention to the matter in the JOURNAL? I enclose copy of fee bill.*

Very truly yours, E. MAMMEN.

RECIPROCAL CASUALTY EXCHANGE

BRUCE DODSON, MANAGER

KANSAS CITY, Mo., July 17, 1912.

Re-Manufactured Ice & Cold Storage Co., Bloomington, Ill.

DR. E. MAMMEN, Bloomington, Illinois.

Dear Doctor: You returned our medical list with statement which is addressed by many of your profession to Casualty Companies, and in reply beg to advise you that the Exchange is not really an incorporated company, and is not in the business for profit (!?) inasmuch as protection is furnished to members of certain trades at actual cost, in view of which we think it but fair that you sign our list, two copies of which we enclose herewith.

We would appreciate it if you would give us a statement of what you consider in McLean County fair and just estimates of the work to be done.

Thanking you, we are,

Yours very truly,

BRUCE DODSON, Manager.

UNITED STATES CASUALTY COMPANY, 141 BROADWAY, NEW YORK

New York, November 12, 1912.

(Open Letter)

Dr. W. H. Gardner, President, McLean County Medical Society, Bloomington, Ill.

Dear Doctor Gardner: Some one has sent to me a copy of your circular letter addressed, as President, to the members of the McLean County Medical Society, in which you urge doctors not to sign the medical and surgical fee schedules in use by liability insurance companies in connection with the *Illinois Workmen's Compensation Act*.

Your circular letter states, in effect, that the members of your society, having a binding agreement among themselves to charge not less than certain fees, and such fees being in some cases higher than those named in the schedules of the insurance companies, it might lead to embarrassment should the doctors sign the schedules of insurance companies; and that—in any event—no doctor is likely to lose by refusing to sign the schedule of an insurance company inasmuch as the new law permits an injured employee to choose his own doctor.

* See Dr. Allison's article, page 699.

In each state where there is a law requiring the employer (or his insurance company) to provide medical attention for injured employees, the United States Casualty Company is obtaining the signatures of skilful and reputable doctors to its "Medical and Surgical Fee Schedule." Other liability insurance companies are doing the same thing. We have to do it, otherwise our liabilities would be hopelessly indefinite and unlimited.

Ever since liability insurance has been written in this country the insurance company has paid the cost of "first aid to the injured." Many policies required the insurance company to pay the entire cost for medical and surgical attention to all injured employees of the assured during the entire period of disability.

Whenever an insurance company has contracted with an employer to furnish full medical attention to all injured employees, a contract has been made with one or more skilful and reputable doctors to furnish such attention.

The furnishing of such medical attention has been a voluntary act on the part of the employer. Not until workmen's compensation laws were enacted was the employer compelled to furnish medical attention to injured employees.

Now that the laws of some states (including Illinois) compel the employer (or his insurance company) to provide injured employees with medicines and medical, surgical and hospital services, it is reasonable and necessary for insurance companies to agree in advance with doctors concerning their fees.

The payments for medical attention alone are bound to be a large part of the entire payments by employers (or their insurance companies) under any workmen's compensation law so far enacted in this country. In Wisconsin, where the law has been in force for over a year, the payments for medical attention have been larger than the payments to the injured workmen. The Illinois Workmen's Compensation Act has a more drastic medical attention feature than any other state has thus far enacted. In France, where the injured employee may select his own doctor, although the employer pays the fee, the workmen's compensation law is known as "The Doctor's Graft Law."

In fixing premium rates for workmen's compensation insurance the insurance companies have to take into consideration the cost of the medical attention feature.

The insurance companies have had much experience, as stated above, with doctor's fees. The fee schedules they have asked doctors to sign are based on that experience. While in the main the schedules of the companies are about the same, they naturally vary somewhat as respects specific fees. But no company can vary its schedules to suit the varying customs in all different localities, for that would necessitate impracticable variations in rates.

Judging from my experience over the entire country during the past twenty years, and from the opinion expressed to me by doctors themselves, and from the fact that doctors in the several states where workmen's compensation laws are in force are freely signing it, it seems to me that the fees named in the "Medical and Surgical Fee Schedule" of the United States Casualty Company are equitable. Less than one-tenth of one per cent. of the doctors to whom we have submitted our schedule have declined to sign it.

I quote from your circular letter as follows:

"Remembering that the work rendered these companies can not be exclusive, as the employee has the right to employ such physician as he may choose, we wish to ask you to refuse to sign such fee bill as they may present."

If you mean that the employer (or his insurance company) must pay the fee of any physician or surgeon selected by an injured employee, you are mistaken. The law reads:

"Sec. 5. The amount of compensation which the employer... shall provide and pay... shall be:

"a. Necessary first aid, medical, surgical and hospital services, also medicine and hospital services for a period not longer than eight weeks, not to exceed, however, the amount of two hundred dollars, also necessary services of a physician or surgeon during such period of disability, *unless such employee elects to secure his own physician or surgeon...*"

If you mean that it will bring you into disrepute with your own regular patients to have a binding agreement among yourselves to charge them certain

fixed fees, and yet to attend injured workmen for insurance companies for different and in some cases lesser fees, I submit for your consideration the following thoughts:

Of course no one can object to your refraining from signing the fee schedule of an insurance company if by so doing your total income will be reduced.

But I do not think it will be reduced. I think it will be increased.

Although you now *charge* injured workmen the fees you have agreed upon as your minimum fees, you frequently do not *collect* the full amount—sometimes you do not collect anything at all.

When you act for an insurance company you will surely receive the full amount named in their rate schedules.

Even if the fees, in some cases, named in the schedules of the insurance companies are less than those named in your agreement, you will *collect* more when acting for insurance companies than when acting independently of them.

In other words, you will have no "charity patients" among injured workmen whose employers elect to operate under the Illinois Workmen's Compensation Act. They will all become "pay patients." There is a well grounded belief that doctors scale their fees according to the ability of the patients to pay, and that they never refuse to administer to the wants of any one in distress, even when there is no prospect of a fee. Outside of the clergy, probably physicians do more good without reward or hope thereof than any other class. No one wants them to do more work without pay or the same work at less pay.

But if the proposition in your circular letter is pushed to its logical conclusion, it will raise the fees you charge laboring men to the level of the fees you charge those in affluence. Now you collect a certain amount each year, and do a certain amount of work for which you collect nothing at all. If all your patients paid, you could reduce your rates of fees and still collect more money. We will assure you your fees, if you will agree to our terms. Our proposition under the new law is a good thing for the doctors. Your doctors can be a mighty factor in making the new law a success, but if doctors generally follow the course you now propose it will be a failure.

Taking everything into consideration, our fee schedule is a most liberal proposition. In no other country in the world, with the exception of Canada, where workmen's compensation laws are in force, are the fees paid doctors anything like as high as those named in our schedule.

If all the doctors in Illinois should refuse to attend injured workmen unless they were guaranteed fees in excess of those named in our schedule, the Illinois Workmen's Compensation Act would be brought into disrepute, and the working-men would suffer thereby.

The industries of Illinois can pay some certain amount *and no more* for compensation. If the cost is increased beyond the breaking point, industries must suffer, and the workmen and their doctors must suffer with them.

The largest possible percentage of the entire compensation fund should be preserved for the injured workmen and their dependents.

The smallest legitimate part of the fund should be diverted from the pockets of the injured workmen and their dependents to the insurance companies, the lawyers or the doctors.

I, therefore, urge you to reconsider your appeal to your brother practitioners, and as there must be much in common between doctors and insurance men in making your law a success, I sincerely trust that, whatever else may happen, there shall be no antagonism between us.

Because of the vital public interest attaching to the attitude of the doctors in connection with the question under consideration, I am sending a copy of this letter to *The Western Underwriter*, of Chicago, an insurance journal widely read in your state, with a request that it be published in its next issue, together with a copy of your circular letter and a copy of our "Medical and Surgical Fee Schedule."

Most truly yours,

EDSON S. LOTT,

President, United States Casualty Company, New York.

Dr. Murphy has brought this matter to the attention of the Chicago men in the following letter:

Enclosed please find a schedule from the U. S. Casualty Co. of 141 Broadway, New York City; also a letter requesting that I should sign the same and also a copy of my letter in response.

I feel that the Chicago Medical Society should take some action that is definite on a fee list. Their rates are entirely inadequate to compensate for the responsibilities involved in the conditions mentioned, and such a fee list is a decided detriment to the medical profession at large and particularly to the general practitioner, who does most of the work mentioned under the headings of medical and surgical fee schedule.

I trust you will bring this before the Council for consideration and that official action will be taken on it.

I am sure that you will consider that this is impersonal with me, as it involves a class of work and cases that never come to me at this time.

Very truly yours,

J. B. MURPHY.

DISTINGUISHED MEDICAL CENTENARIANS

The untimely death of Dr. Franklin R. Pitner, prevented the anticipated celebration of his centennial birthday. A number of distinguished medical men have lived to 100 years or more. Probably the most noted was Michel Eugene Chevreul, a French chemist born Aug. 31, 1786, at Angers, where his father was a physician. At about the age of 17 he went to Paris and entered L. N. Vauquelin's chemical laboratory, afterwards becoming his assistant at the natural history museum in the Jardin des Plantes. In 1813 he was appointed professor of chemistry at the Lycee Charlemagne, and subsequently undertook the directorship of the Gobelins' tapestry works, where he carried out his researches on color contrasts. In 1826 he became a member of the Academy of Sciences, and in the same year was elected a foreign member of the Royal Society of London, whose Copley medal he was awarded in 1857. He succeeded his master Vauquelin, as professor of organic chemistry at the natural history museum in 1830, and thirty-three years later assumed its directorship also; this he relinquished in 1879, though he still retained his professorship. In 1886 the completion of his hundredth year was celebrated with public rejoicings; and after his death, which occurred in Paris, April 9, 1889, he was honored with a public funeral. In 1901 a statue was erected to his memory in the museum with which he was connected for so many years.

Chevreul was a determined enemy of charlatanism in every form, and a complete sceptic as to the "scientific" psychical research or spiritualism which had begun in his time (see his *De la baguette divinatoire, et des tables tournantes*, 1861).

THE PASSING OF THE MEDICINE SHOW

Time was when a medical faker would strike a town with a varied assortment of pills, powders and liquids, and with a banjo and a loud voice dispose of his wares to a gullible public. Later the business advanced by a combination of "Professors" and a regular vaudeville

troup of greater or less size, which hired a hall and attracted a large number of people who paid dearly for the advertisement.

The time is now that this sort of advertisement has about reached its end. In proof of this we submit the following account of the failure of one of these bands as given by Mr. Bonham, editor and proprietor of the *Toluca Star*. Mr. Bonham, it seems, was "stung" by these people for some advertising, and is obliged to take medicine to pay for his ink and paper. He dilates as follows:

The first of last week a medicine show struck town and advertised that they would be here two weeks and hold forth at the Jensen theater where they would give nightly shows. The performances were said to be good, but somehow or other did not draw very large crowds and consequently the sale of medicine was very light, and to make a long story short, as they say, the business was "rotten" for the want of suckers to buy the dope that they claimed would cure any ache or ill that one might be afflicted with.

And right here is where the people of Toluca want to be congratulated on having good judgment in not patronizing them, when we have plenty of good doctors here at home who would give them better service than the large majority of the so-called doctors who travel and advertise their wares—because if they are good they don't have to travel to make a living.

Business being bum the manager had business at other places Saturday night, and left saying that he would be back soon, and as yet we are looking for him. As Jensen has not received any rent for the theater, he refused to let the show people move their trunks until he received the long green. They finally, by digging deep in their pockets, managed to scrape up enough money to pay Jensen for the use of the theater, after which they left happy on their way. A printing bill not paid was placed in the hands of a constable to collect, and as there was no money, three boxes of medicine was attached, and as a result we have enough medicine to cure the stomach ache of all the editors within a hundred miles of Toluca, and we would judge from the result of Tuesday's election that there will be quite a number of them troubled with the stomach ache—speak up, if you need the dope, we've got it and can cure you.

Since the above was written we learn that a medicine show at Prophetstown, Whiteside County, drew a large audience recently and sold one hundred dollars' worth of dope. The intelligence of a town sometimes is clearly defined.

WHO HAS TRIED TO SELL FREE ANTITOXIN?

In our editorial of last month on this matter we expressed the belief that if any one had been guilty of selling, or trying to sell free antitoxin he would be found to be a graduate from one of the inferior medical schools, whose graduates have been permitted to practice in the state of Illinois by grace of the Board of Health. From the state of Washington comes a letter which will be found in our correspondence columns, and which seems to confirm the opinion expressed in that editorial. Several physicians have written us that they had communicated with Dr. Egan concerning the statement emanating apparently from his office, and in answer they say, Dr. Egan communicates that he is "on the trail" of certain physicians who are charged with this crime, but refuses to commit himself as to who these parties are. The physicians agree with us that all medical men of Illinois are more or less under suspicion until the

guilty parties are exposed, and that the charges should be definitely proven, or the charges as publicly withdrawn as they were made.

We understand that Dr. Egan now says the statement that he had been ordered to prosecute certain physicians did not come from his office. From where did it come, then?

PROSPECTIVE PANAMA TRIP FOR MEMBERS OF THE ILLINOIS MEDICAL ASSOCIATION AND THEIR FRIENDS

Since it has been announced by President Taft that the water will be turned into the Panama Canal next summer, a number of physicians have expressed a desire to visit the Isthmus this winter. Arrangements are under way looking to a Panama trip for members of the Illinois Medical Association and their families and friends in a body, leaving some time after the first of next year, probably in February. The proposed trip will include all expenses, such as transportation by rail and steamer, sleepers, meals on diners, hotels where required, etc. The plan is for the party to assemble at an agreed point and make the trip from and back to that point together. The rush of tourists to Panama last winter and the bookings of steamers for this season has been so great that it is difficult for individuals to get reservations, hence the advantages of an arrangement for the party as a whole in addition to the social features. It is necessary to secure steamer accommodations well in advance and make a deposit thereon in order to hold them. Members of the Association who want to make the trip, or who have friends who want to go, are requested to write to Dr. Geo. N. Krcider, Editor THE ILLINOIS MEDICAL JOURNAL, Springfield, Ill., for further particulars, and full information as to route, rate, manner of making deposits and other payments, etc., will be mailed them as soon as final arrangements for the trip are completed.

ARMY MEDICAL CORPS EXAMINATIONS

The Surgeon-General of the Army announces that preliminary examinations for the appointment of First Lieutenants in the Army Medical Corps will be held on January 20, 1913, at points to be hereafter designated.

Full information concerning these examinations can be procured on application to the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of Doctor of Medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as an intern, after graduation. The examinations will be held simultaneously throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general education (mathematics, geography, history, general literature and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

In order to perfect all necessary arrangements for the examination, applications must be completed and in possession of the Adjutant General at least three weeks before the date of examination. Early attention is therefore enjoined on all intending applicants. There are at present thirty-five vacancies in the Medical Corps of the Army.

SUBJECT OF SMALL MEDICAL LIBRARY

Practically the whole of the October number of the *Bulletin* of the Medical Library Association, published in Baltimore, is devoted to an article by Dr. Carl E. Black, Jacksonville, Ill., on the subject of the small medical library.

The *Bulletin* has the following editorial regarding Dr. Black's article and the work which he suggests:

We print in this number of the *Bulletin* a very important article by Dr. Carl E. Black, of Jacksonville, Illinois, the perusal of which we recommend to every member of the association. The subject of country libraries is one of very great importance in this country, and one that should be taken up by the American Medical Association in some very definite way; as that association is now in very close touch with the county organizations and a great deal could be accomplished by following out some well matured plan of action.

The Medical Library association has already started the work but it seems to us that it belongs partly to the national society. There are so many medical journals and so many new books published that no physician of moderate means can hope to purchase all that he really needs. A physician, will, of course, always have a few of the more important journals and his working library which he needs from day to day, but for occasional reference he requires many books and many journals. Not only that, he needs some one to help him find the articles he wants, and possibly to abstract such information as may be required.

Each county society should be supplied with a good working library consisting of the latest medical books and the more important journals. The older books and those of historical interest will come by donation and exchange. A collection of books without some one to look after it or help the busy doctor, is almost useless so that a competent librarian should be obtained, and if the librarian has sufficient leisure the articles in the current journals can be so indexed that the physician in any town of the county can have at his immediate disposal the latest information on any given topic.

MORPHIN VERSUS OPIUM

W. Straub¹ and H. Caesar² have attempted to find the cause of the difference in action between opium and morphin and have reached some important conclusions. From a review³ of their investigations, the following is taken:

1. *Biochem. Ztschr.*, 1912, xii, 419.

2. *Biochem. Ztschr.*, 1912, xiii, 316.

3. *Jour. Am. Med. Assn.*, Sept. 14, 1912, p. 882.

" . . . we can scarcely explain the characteristic 'opium effect,' in contrast with the action of its contained morphin, on the basis of a simple summation of the dosage of its contributory alkaloids.

"There are ways in which one substance may augment the action of another without merely adding its own specific potency to that of the second. A compound inert in itself may modify the sensitiveness of the organism to other substances; in other words, it may fortify their efficiency by rendering the individual peculiarly receptive or by other less apparent means. Herein seems to lie the superior efficiency of the combined opium alkaloids, according to recent observations by Straub. Using narcotin, the most abundant companion of morphin, in doses too small to produce typical pharmacologic effects of themselves, he has found that it modifies and greatly increases the effects of morphin. This was demonstrated for a variety of manifestations peculiar to the action of this drug. In cats narcotin lessened the excitant effect of morphin; in rabbits it lessened the depression of the respiratory center; in mice it may almost double the toxicity of morphin. These researches have made it probable that the practical differences between opium and morphin are mainly due to the narcotin. H. Caesar, working with Straub, has made comparable trials with the other alkaloids associated with morphin in opium and found that these do not produce an equal reinforcement of the features under discussion, at least when used in quantities suggested by their natural occurrence in opium.

"They do have complex modifying effects, however, which are further complicated by any changes in their relative proportions. Since these proportions vary enormously in different samples of opium, and still more in its galenical preparations, and since the influence of these variations can neither be foreseen nor calculated, Straub and Caesar suggest the employment of a simple mixture of equal parts of morphin and narcotin in place of the opium. This proportion was found much more favorable than that existing naturally in opium (1 part of morphin against from 0.075 to 0.9 parts of narcotin, Brihl).

"Straub's discovery of the peculiar pharmacologic interrelation of these two alkaloids marks a step in progress. While we are not convinced that the morphin-narcotin mixture will prove useful, the investigation suggests that scientific drug combinations should replace random haphazard mixtures."

Correspondence

WHO SELLS THE ANTITOXIN?

STATE OF WASHINGTON, Nov. 9, 1912.

To the Editor:—About physicians selling antitoxin as mentioned in your editorial of November. It has been tried, but the case I have in mind was not by a member of the Medical Society, but by a graduate of that deficient night school, the National. A certain I. G. L., of N., Ill., a most disreputable character, who attempts to practice medicine, was called about

August 1, 1910, to a case of diphtheria, two children recovering and one desperately sick. He notified the father that four doses of antitoxin should be given, one to the sick child and three others of the family, and it would cost \$5 per dose. I was called on the second day of August, child gasping for breath and sent at once twelve miles for free antitoxin, and also for another physician to help do tracheotomy if it became necessary. We had the antitoxin in three hours, and in twelve more the child was 50 per cent. better and finally recovered.

Mr. Editor, such men are licensed and allowed to practice in the State of Illinois despite the fact that the State is badly crowded with doctors. Why is it? Keep up your fight on the State Board of Health. It's the outlying districts like N. where the greatest harm is done by these "medical abortions" licensed by the State Board of Health.

Yours sincerely,

P. S.—Formerly located at N., Ill.

J. B. KINNE, M.D.

LEAGUE FOR MEDICAL FREEDOM EXPOSED

To the Editor:—The National League for Medical Frauds has at last thrown off all disguise. It never had any other purpose than to oppose the march of scientific medicine, and to this end it gathered all the odds and ends, the rag-tag and bob-tail of all the isms and pathies from coast to coast and organized them under a high-sounding title in order to combat the necessary legislation aimed at the plausible parasites who prey on the unending store of human credulity. The Eddyites, the Dowieites, the patent medicine leeches, and all the disciples of isms and pathies could all agree when it came to making war on real scientific progress. For once they felt really at home in the house of their father. Any one who questions the real designs of this motley aggregation of frauds will find some exceptionally profitable reading in *The Journal of the American Medical Association* for November 23, p. 1896.

A certain element of society may be divided into three classes: Fools, ———— fools and educated fools, and may the good Lord deliver us from the last named.

PHYSICIAN.

REPRINTS ON FRACTURES WANTED

The American Surgical Association has appointed a Committee consisting of Drs. William L. Estes, South Bethlehem, Pa.; Thomas W. Huntington, San Francisco, Cal.; John B. Walker, New York City; Edward Martin, Philadelphia, and John B. Roberts, Chairman, 313 S. 17th Street, Philadelphia, to report on the Operative and Non-Operative Treatment of Closed and Open Fractures of the Long Bones and the value of radiography in the study of these injuries. Surgeons, who have published papers relating to this subject within the last ten years, will confer a favor by sending two reprints to the Chairman of the Committee. If no reprints are available, the titles and places of their publication are desired.

JOHN B. ROBERTS, Chairman,

313 S. 17th Street, Philadelphia.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The Adams County Medical Society met in regular monthly session, Monday, Oct. 14, 1912, at the Chamber of Commerce Rooms, Quincy, Ill.

Business meeting was called to order at 11 a. m. by President Pittman. Others present were: Drs. Austin, Ball, Brenner, Blickhan, Center, Christie, Ericson, Knapp, Knox, Koch, Ray and W. E. Mercer, Nickerson, Pearse, Stine, J. B. and Kirk Shawgo, and Dr. Clarence Frame of Missouri.

It was moved and seconded that the Adams County Medical Society take out incorporation papers. Much discussion followed this motion. Dr. Nickerson, the state president, was called on to tell the history of the Adams County Medical Society, when it was incorporated, etc. The doctor stated that the society was incorporated in 1861, as the Adams County Medical Society. For some reason or other meetings were not held, consequently the papers of incorporation had lapsed and been declared null and void by the secretary of state. The motion was put to a vote and was lost. Dr. J. W. E. Bitter was unanimously elected to membership in the society.

The noon hour having been reached the members adjourned to the Hotel Newcomb, for lunch. The afternoon was devoted to the scientific program. A discussion on "Hypertrophied Prostates, Prostatectomy (supra-pubic and perineal), and the Medicinal Treatment." A very fine specimen was shown by Dr. Christie. The gland had been removed by the doctor by the supra-pubic route, a few days before. The patient was a man over eighty, and he seemed to be recovering in a very satisfactory manner.

The president asked Dr. Frame, our visitor, to take part in the discussion. The doctor stated that he had visited the Adams County Medical Society before, and he had always felt that his time had been well spent, and that he had gained something from his visit. Then he gave his ideas along the line of treatment for hypertrophied prostates.

Just by way of diversion the president related a very interesting case of diphtheritic infection, which had been contracted from a cat that had diphtheria. The infection began in the conjunctiva and pharynx. The patient recovered but the cat died.

On motion the meeting adjourned.

The Adams County Medical Society met in regular session at the Chamber of Commerce Rooms, on Monday, Nov. 11, 1912. Meeting called to order at 11 a. m. by President Pittman. About 35 members were present. The first communication for consideration was that concerning the medical school of the University of Illinois. After discussing the matter thoroughly it was decided to concur in the resolutions adopted by the Illinois State Medical Society, and also to adopt the resolutions suggested to county societies. A committee consisting of Drs. R. J. Christie, L. H. A. Nickerson and W. W. Williams, was appointed to cooperate with similar committees from other county societies, to present this project to the members of the legislature and urge it upon their attention.

A resolution was passed requesting Governor-elect Dunne to consider the recommendations of the Illinois State Medical Society, when appointing the various members of the State Board of Health.

The platform of the Illinois Highway Improvement Association was unanimously endorsed, and the secretary instructed to take out membership for the society in the said association. We want good roads! Signed—Drs. W. E. Mercer and R. J. Christie.

By the time other business matters were discussed the luncheon hour was reached. We adjourned to the Hotel Quincy, where a bounteous lunch was served.

Reassembling in the afternoon the scientific program was taken up. This consisted of a Symposium on Tuberculosis, and a paper "The Serum Treatment with Special Reference to Tuberculin." The following members read very carefully prepared papers:

Dr. Blickhan: a. "Physical Signs of Pulmonary Tuberculosis." b. "Surgical Treatment of Pulmonary Tuberculosis."

Dr. Becker: "Tent Colonies, Their Object, What They Have Accomplished."

Dr. H. D. Collins: "Tubercular Conditions in Quincy."

Dr. C. E. Ehle: a. "Diagnosis of Pulmonary Tuberculosis in Children." b. "Reaction of Tuberculin in Children."

Dr. A. E. Kidd: a. "Tuberculosis of Lymph-Glands of Neck." b. "Tuberculosis of Pharynx."

Dr. W. S. Knapheide: "Pathology and Treatment of Tubercular Joints."

Dr. W. E. Mercer: "Climatic and Dietetic Treatment of Tuberculosis."

Dr. Warren Pearce: "Serum Therapy in Tuberculosis."

Dr. O. F. Schullian: "Operative Treatment of Tubercular Peritonitis."

Dr. D. G. Stine: "Bacteriology of Tuberculosis. Different Methods of Staining, Ziehl-Nielson, Pikrin, Spengler's."

Dr. D. I. Tripp: "Pathology of Tubercular Meningitis."

Dr. M. C. K. Germann: "The Serum Treatment with Special Reference to Tuberculin."

This was one of the best meetings held during the year. The discussions which followed the scientific program were interesting, enthusiastic, and instructive.

When all the papers had been thoroughly discussed the meeting adjourned.

The following resolutions were adopted:

Resolved, That the Adams County Medical Society call the attention of Governor-elect Dunne, to the fact that the Secretary of the State Board of Health has always acted in opposition to the wishes of the medical men of the State, and that he be requested not to reappoint Dr. Egan as Secretary, also, that he consider the recommendations of the Illinois State Medical Society in the appointments of the various members of the Board of Health.

THE SERUM TREATMENT WITH SPECIAL REFERENCE TO TUBERCULIN

M. C. K. GERMANN, M.D.

Under serum treatment, I shall also include the bacterial vaccines or bacterin therapy.

Serum therapy has brought about a wonderful change in the knowledge as well as the practice of medicine. It is not only important from a diagnostic point of view but also as a prophylactic and curative agent. We are indebted to Pasteur for his discovery of the relation between the micro-organism and disease. It was Metchnikoff who discovered that certain leukocytes, called phagocytes, possessed the power of destroying the pathogenic bacteria in the blood, thus overcoming infection, and Sir A. E. Wright of London demonstrated how this was done: viz., that the antibodies in the system, or as he termed them, opsonins, combine with the bacteria to destroy the infection. He also demonstrated how the opsonins may be increased by injecting bacterins into the system and so the bacterial origin of infectious disease was firmly established and a new method of treatment adopted.

The serums differ from the bacterins. The former contain antibodies, the latter do not. The serums when introduced into the system, bring about a passive immunization because they simply increase the number of antibodies in the system, while the bacterins when introduced, stimulate the tissues to produce more antibodies which increase the destructive power of the leukocytes against the bacteria. The serums are obtained from the blood of animals, usually horses, who have received injections of bacterial toxins in increasing quantities until enormous doses have been administered without ill effect, when the animal is thoroughly immunized and his blood charged with antitoxin. The bacterins are composed of

killed pathogenic bacteria suspended in normal salt solution standardized by determining the number of bacteria per c.c. in suspension.

Both serum and bacterin diagnosis have now become a well established diagnostic method and have proved of value in all fields of medicine. The serum diagnosis of syphilis, for instance, is, according to Butler, found positive in from 80 to 85 per cent. of all cases with syphilitic manifestations, in from 50 to 60 per cent. of latent cases, and 70 to 80 per cent. in parasyphilitic. The gonococci vaccine is regarded invaluable as an aid to the diagnosis of affections due to the gonococcus. Since the discovery of tuberculin, its value as a diagnostic agent has been recognized. Its use for this purpose has been so extended that now when properly used, the absence or presence of tuberculosis can be positively determined.

As curative agents, we have first and very important on our list, diphtheria antitoxin, which has reduced the death rate of diphtheria 66 $\frac{2}{3}$ per cent. and could show a better per cent. of usefulness if it were used in the early stages of the disease and in sufficiently large doses. Its prophylactic uses are also of inestimable value. Tetanus antitoxin has shown its value both in the treatment of tetanus and as a prophylactic in the presence of suspicious wounds, where its efficiency has been demonstrated many times. Through Dr. Simon Flexner's exhaustive experimental work, an anti-meningitis serum was perfected which has materially reduced the mortality of that form of cerebrospinal meningitis produced by the meningococcus of Weichselbaum.

And so I might mention more of the serums which have greatly reduced the mortality of many of the infectious diseases. Now the question arises, when are the serums indicated and when the bacterins? The former give the best results in acute general infections when the patient's condition is such that he cannot produce sufficient antibodies to overcome the pathogenic bacteria, while the latter are most useful where the infection is localized.

The various tuberculins differ from the bacterins chiefly in their method of preparation. Of the various preparations on the market, tuberculin Ruckstand T. R. has, in my hands, given the best results. According to Trudeau and Sahli, and this has also been my experience, the best results are obtained when the treatment is begun with minute doses and gradually increased so there will be no constitutional reaction. It is impossible to know when such a period of tolerance is reached, as some patients acquire this more quickly than others. Six months should be the shortest time required for treatment and this is only when no intolerance is manifested. Otherwise ten months or even two years, as was my experience in treating a case of tuberculosis of the kidney. It is a mistake to shorten the time by increasing the doses too rapidly or decreasing the intervals. Our aim should be to prevent a reaction if possible, especially at the beginning of the treatment: quite contrary to the old method which was based on the production of pronounced local and general reactions which were thought essential to cure. Should a marked reaction occur in the beginning of the treatment, it is more difficult to habituate the patient to an increase in the dosage.

The most valuable symptoms of supertuberculinization are rise of temperature, prostration, and an aggravation of symptoms of the form of tuberculosis from which the patient is suffering. As in pulmonary tuberculosis, there will be increase of cough and expectoration. In the presence of these symptoms, the dose must either be repeated or reduced, the most effective dose being that one just short of producing a reaction. As regards the cases suitable for tuberculin treatment, I have not had the best results in acute cases, especially those of the pulmonary type. The more chronic the type of disease, the better adapted the case seems to be for tuberculin treatment, provided the nutrition is good and no serious complications exist.

The types of cases which have responded best to tuberculin in my hands, have been tuberculosis of the cervical as well as of the mesenteric glands, tubercular laryngitis, and one very interesting case of tuberculosis of the kidney. I have treated a number of cases of tuberculosis of the cervical glands. In one instance, patient had undergone an operation for their enucleation. The right side in this case was affected and the glands accordingly removed. In less than a month

the other side became involved. The wound on the right side was very obstinate in healing, the fistulous opening remained in spite of all local treatment including Beek's paste. The tuberculin treatment was begun. Injections were given beginning with minute doses containing 1/10,000 milligram of tuberculin. These injections were repeated in ascending doses at intervals of four days, and at the end of six months, the sinuses of the right side were closed and the tumefaction of the other side had also entirely disappeared. It is now four years and no return of the malady. I have a case now under treatment of a similar nature, the tubercular cervical gland broke down, an abscess formed which was opened and curetted but refused to heal until the tuberculin was used. The affection responded nicely to the treatment, the sinus closed and the induration in the immediate neighborhood has about disappeared.

An interesting case of tuberculosis of the mesenteric glands was a young woman who was operated on for ovarian cyst. In addition to this the peritoneal cavity was studded with tubercles. The glands were also involved. The patient recovered very nicely from the operation but the wound was slow in healing. Tuberculin was given hypodermically in ascending doses. Several severe reactions were present, especially when the larger doses were given. She has never been able to take more than 1 mg. of tuberculin. The treatment has been discontinued now for nearly one year and she is at present enjoying the best of health.

A case of primary tubercular laryngitis proved very interesting and responded beautifully to the tuberculin treatment. Patient woman unmarried, 32 years of age, came to me complaining of hoarseness and a desire to clear the throat; no temperature, somewhat anemic. Upon laryngoscopic examination, there was found enlargement of the vocal cords causing an interference in the approximation during vocalization. There was also edema in the ary-epiglottic folds, more intense on the left side. Tuberculin was given, beginning with minute doses and gradually increased. At first there was little response, in fact not any until the larger doses were reached. It is now nearly two years since treatment was begun and patient seems in splendid condition, having gained some twenty pounds. A very interesting feature in this case is that there never has been an intolerance present, although injections were given three times a week while the smaller doses were used, later when the stronger ones were reached, two times a week, but never a reaction.

One of the most interesting cases treated by tuberculin was that of tuberculosis of the kidney. Patient a woman, married, aged 28 years; has two children; complained since the birth of her last child, April 28, 1907. Had been sick about four years when I was consulted. Her symptoms were nausea, vomiting, pain in right kidney and bladder, desire to urinate every fifteen minutes, dysuria. A bacteriologic urinalysis was made by the Columbus Medical laboratories and the result showed tuberculosis of the kidney. An operation was recommended but patient refused. It was at this time that she consulted me. In addition to internal as well as local remedies to relieve her suffering, she was given tuberculin T. R. beginning with 1/10,000 milligram and doses gradually increased every fifth day until the larger doses were reached. She has had several severe reactions when I was obliged to drop back to a smaller dose but patient has been steadily improving in strength and flesh, has gained some 15 pounds; in fact, weighs more at present than she ever did, and the last urinalysis made, showed an absence of tubercular bacilli.

BOND COUNTY

The Bond County Medical Society held a meeting in the Supervisor's room at the Court House in Greenville, Ill., October 3. Dr. D. V. Poindexter, of this city, and Drs. J. S. Poindexter and D. T. Brown, of Mulberry Grove, were elected to membership. Dr. E. P. Poindexter, of Greenville, and Dr. W. B. Hutchinson, of Mulberry Grove, were elected honorary members. There are only five physicians in the county who are not members of the society. At the meeting Dr. J. C. Wilson read a paper on "What is the Trouble with the Bond County Medical Society?" After the reading of this paper, the subject was generally discussed.

The invitation from Dr. W. A. Allen of Donnellson to attend a quail dinner at his home on November 21, was presented and accepted. The doctors will make the trip in automobiles if the weather is favorable.

The regular routine of business was transacted and minor arrangements were made for the joint meeting of the Bond and Fayette County societies to meet at Mulberry Grove next year.

Those present were Drs. Coop, Easley, Wilson, Keith, E. P. and D. V. Poin-dexter, of Mulberry Grove, and Dr. Cordonnier of Beaver Grove.

BROWN COUNTY

The October meeting of the Brown County Medical Society was held in the Park at Ripley, Ill., and in addition to the regular scientific programme combined the pleasant features of an outing and picnic dinner. The presence of members' wives was a social feature that added much to the pleasure of the occasion. The cross country journey was pleasantly invigorating and served to stimulate a sharp appetite that made the delicious chicken dinner that was spread upon the green, all the more palatable and it is needless to state that this number of the programme was most cheerfully and thoroughly discussed by all.

The meeting was called to order at 2:00 o'clock by our esteemed president Dr. D. W. Owens. The following members responded to roll-call: Drs. Peters, Allworth, J. Frank Wilson, S. J. Wilson, Henry and Parker.

Dr. Garm, of Beardstown, was the society's invited guest and gave an able and most excellent paper on "Carbon Dioxid Snow," its preparation, and therapeutic uses, reporting a number of cases in which he had used it successfully.

Dr. Parker read a short paper on "The County Medical Society and Why We Should Join It." After discussion of the papers a vote of thanks was tendered Dr. Gram for his presence and valuable paper.

Dr. Henry and wife were charming hosts and their preparation and cordial hospitality was greatly appreciated. It is a source of regret to those members who were unavoidably absent to miss the pleasure and profit of this, one of our very best meetings.

BUREAU COUNTY

The Bureau County Medical Society held its meeting at Princeton, Ill., in the City Hall, November 14, when the following program was listened to with great interest.

1. The Wassermann Test. (a) Technique. (b) Value of test. Discussion, Dr. Wilbur E. Post, Chicago; Dr. F. B. Schroeder, Princeton; Dr. J. J. Moran, Spring Valley.

2. Report of two cases, manifesting nervous symptoms, unclassified, Dr. H. M. Blackburn, Princeton. Discussion, Dr. W. E. Howard, Ohio; Dr. A. E. Owens, Princeton.

3. Report of four cases of Tubal Pregnancy, Dr. C. C. Scott, Princeton. Discussion, Dr. S. W. Hopkins, Walnut; Dr. M. J. Coveny, Spring Valley.

4. Fixation for Movable Kidney, Dr. Hugh M. Orr, LaSalle. Discussion, Dr. M. A. Mix, Princeton; Dr. C. F. Horner, Tiskilwa.

CARROLL COUNTY

The fall meeting of the Carroll County Medical Society was held Tuesday, October 15, at Mt. Carroll, in the Carnegie Library. Those present were Drs. Colehour, Clay, Cottrel, Hartfield, Lyness, May, Melugin, McGrath, McPherson, Metcalf, Mershon, Paekard, Parusse, Rinedollar and Sagner of Carroll County; Stealy, Snyder and Harlan of Freeport; Stafford and I. C. Smith of Stockton, and D. G. Smith of Elizabethtown.

Resolutions on the death of Dr. J. D. Overholser were adopted. Officers for the following year were elected: president, I. J. Paekard; vice-president, E. M. Hartfield; secretary and treasurer, H. S. Metcalf.

The following program was of unusual interest: "Anterior Poliomyelitis," Dr. Colehour, Mt. Carroll. "Arteriosclerosis," Dr. Cottral, Savanna. "The Medical Profession and the Business Side of It As It Stands To-day," Dr. D. G. Smith, Elizabeth. Informal discussion. "The Increased Cost of Living and the Fee Bill," Drs. Hendricks, Johnson, Lyness, Melugin, McGrath, McPherson, Miller, Rice, Rinedollar, Schreiter. "Vaccines," Dr. Harlan, Freeport.

The paper on anterior poliomyelitis, awakened much interest. The article arteriosclerosis was an exhaustive study of the subject, and Dr. Smith's address was a breezy and practical discussion of the business side of the physician's life.

The following sentence may be called his text: "Every member of the profession can not help but feel proud that he is living in such an age as this, and belonging to a profession that has accomplished so much, but when we calmly think over the situation, and glance at our bank account we cannot fail to see that the two ends, the professional end, and the business side, have not kept pace with each other." Here are several of his effective sentences: "Gratitude is a very prominent symptom during the height of illness, but it declines very rapidly during convalescence, and disappears entirely upon complete recovery. No physician has a right to devote his whole time to his practice. If he does he becomes a beast of burden, fit only to come and go at the call of his patrons. If we want to preserve our prestige and influence as an organization, it is expedient for us as individuals, to bear and forbear, we must forget our animosities and personal grievances. In other words, put in our daily practice the principles of the Golden Rule. Undoubtedly, we are quite some way from this happy outcome, but in looking back over the field we can not help but feel that our profession is doing better in this respect than it has in the past."

CHAMPAIGN COUNTY

The Champaign County Medical Society held its regular meeting Oct. 10, 1912, at the Natural History Building, University. Dr. Oliver S. Ormsby, of Chicago, addressed the society on the subject of "Syphilis." Dr. Ormsby stated in the beginning of his address that more advance had been made in the last four years in the study of syphilis than in any other disease. An unusually good and clear demonstration of slides was made with the lantern, and while showing them Dr. Ormsby talked on the differentiation of the syphilides from the other exanthemata and made this remarkably distinct. In the treatment these points were made: "Give one dose of salvarsan in iodopin intramuscularly to clear up the symptoms, which it will do in a very short time. If given during the first fourteen days after appearance of the primary lesion it will in many cases abort the disease. It is very useful in the cases with mucous patches to lessen the danger of infection to others, and in the late cases that show rapid destruction. The advice was to "give salvarsan to clear up the symptoms but mercury to cure the patient." In choosing mercury one should be careful to use that preparation most agreeable to the patient; generally it is found that the salicylate of mercury in one grain doses given intramuscularly in liquid petrolatum twice weekly is the best. Bichlorid in $\frac{1}{4}$ grain doses three times weekly follows as the second choice given in the same way, and mercury by innction as the third choice. Internal treatment is the least satisfactory. Following a term of mercury a few injections of neosalvarsan given intravenously, with salt solution before and after, was recommended. Subcutaneous injections should never be given. The value of the Wassermann reaction for diagnosis was discussed and again the points made were terse and emphatic: "The sero-diagnosis while most valuable must always be weighed with clinical manifestations." The spirocheta pallida does not live longer than six hours outside the host. Infectiousness: secretions from the chancre most virulent, mucous patches and condylomata next, late skin lesions not very dangerous.

In the discussion Dr. W. K. Newcomb commended the plain talk Dr. Ormsby had made on the danger in which physicians stand relative to incurring this disease in treating it and particularly in treating other troubles in persons who also are syphilitic.

Our society can not adequately express to Dr. Ormsby the appreciation that is felt for the courtesy of his visit. The formal vote of thanks was given. The following resolutions were adopted:

1. *Resolved*, That the Champaign County Medical Society is strongly of the opinion that the State of Illinois should maintain under its own control in connection with the University of Illinois a medical school of the highest character, with the best facilities and faculty of instruction, and with abundant equipment for research.

2. *Resolved*, That we, as an organization and as individual members will use every proper means within our power to secure the necessary legislative action to establish, maintain and control such a college of medicine.

T. J. BURRILL,

J. S. MASON,

JENNIE LYONS, Committee.

CLARK COUNTY

The Clark County Medical Association met at Dr. J. Y. McCullough's office, at Marshall, Ill., October 16. A number of important subjects were discussed, and Dr. C. M. Harris was unanimously accepted as a new member of the organization. The next meeting will be held at Martinsville. Those present were: Dr. L. A. Burnside of West Union; Drs. Rowland and Lewis of Martinsville; Drs. Haslit, Weir, S. Bardley, R. H. Bradley, Mitchell and Prewitt of Marshall, and McCullough of this city.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, Oct. 9, 1912

A regular meeting of the Chicago Medical Society was held, Oct. 9, 1912, with the president, Dr. Jacob Frank in the chair. Dr. J. W. Vander Slice presented a paper on "Milk." Dr. W. O. Nance presented a paper on "The New Milk Ordinance." Dr. H. F. Lewis presented a paper on "The Influence of Spina Bifida on Prolapse of the Genitals."

DISCUSSION ON THE PAPERS OF DRs. VAN DER SLICE AND NANCE

Dr. Chas. S. Bacon: The Milk Commission has done excellent work in this matter. The educational work it has done is especially valuable. It has shown the farmer that a high quality milk can be produced, and without enormous expense, by the exercise of due care and the knowledge of how to do it that has been given by the commission.

The profession has learned much since the commission was established. Those of you who know the history of the commission know how much opposition there was to its establishment because its object was not understood at all. That opposition has largely disappeared. The profession has come to know more about milk than it ever knew before.

It must be evident to all after hearing the new milk ordinance explained by Dr. Nance that the important thing is the inspection. The ordinance, no matter how good it may be, would be of no value at all if the inspection is insufficient. We must have competent and honest inspectors. They must be men with proper training to do this work. The milk should be inspected from the time it is obtained from the cow until it reaches its destination. The pasteurizing must be inspected. The whole thing is a farce unless this inspection is adequate.

I understand that there are only six inspectors at present for the farms and the city. We all know that is not a sufficient number of inspectors to do the work. How can we be assured that the inspection is sufficient even if we have a sufficient number of inspectors? That is an important feature.

Undoubtedly the milk supply of Chicago is better now than it was formerly. In 1884 I had occasion to examine a considerable number of samples of milk. I

was at that time working in the laboratory of Dr. Long on the South Side. I learned that the milk was diluted, adulterated and that preservatives of all kinds were used. Of course, we had no bacteriologic examination at that time. It is important that with such an important food product we should not be satisfied until we get a safe supply.

Dr. A. M. Corwin: I am not a pediatrician nor a general practitioner, but I am interested in the milk supply from the standpoint of a consumer. What we want is a clean, fresh raw milk. Pasteurization commercially considered has never appealed to me. If it must be done, as has been said, the most efficient pasteurization can be carried out in the home by the consumer, and that sort of propaganda ought to be pushed by the various authorities that are officially responsible.

It seems to me that the general practitioner is woefully ignorant on this vital matter. One way to overcome that ignorance is to make this a question of medical education. The Milk Commission would do well to bring the subject to the attention of the medical colleges (some of which already teach it) by means of carefully prepared series of lectures and demonstrations to bring it before the young doctor and the embryo doctor so that he will know what it all means and become a factor in bringing about better laws and better enforcement of these laws. I would like to see the colleges enforce on their students the fact that this is a matter of great importance and back it up in their schedules.

A Member: Dr. Corwin spoke of the embryo doctors. During my course in medicine we visited milk stations and farms and then made a written report on what we saw. That is good work.

One point not brought out to-night is the fact that milk produced under proper sanitary conditions and iced immediately is good for 72 hours without any further treatment. The next best milk is that bottled at the collecting stations and then iced. In many farms the milk is run through a separator which throws out not only dirt and bacteria but the cream, and then the milk and cream are mixed to get the proper percentage of fat, as is required by many Wisconsin towns. Pasteurization is not safe. It either spoils the milk or the bacteria are not destroyed. Milk not immediately iced is never safe.

Quick delivery is another important matter. The railroads are much to blame in this matter. The cans are allowed to stand on the sidings waiting for the milk train, and the milk is not properly iced, and if iced at all, the ice is obtained from contaminated creeks or some other poor source of ice.

It is doubtful whether milk at fifteen cents a quart has enough economic value for the poor person. He cannot afford to buy milk at that price.

The raw milk question has another aspect. Finkelstein has shown that boiled milk, milk that has not undergone fermentation or become sour has lost little of its nutritive value. The poor cannot pay fifteen cents a quart. It is doubtful whether they can pay eight cents a quart, and until we can see a way to quick delivery and proper icing of the milk, we must tell the poor to boil the milk. They cannot understand pasteurizing. The milk can be consumed either raw or boiled. In the summer, to avoid diarrhea, the milk must be boiled. That is the only way to kill the bacteria.

Dr. J. H. Hess: Having been a member of the Milk Commission in the earlier days, and knowing the difficulties which were encountered at that time, I would like to say that the Health Department should be supported. It has done the best it could under the circumstances. There was great difficulty met in passing the present ordinance, and therefore the profession should support the department in the work it is trying to do. They know that the number of inspectors is insufficient, but what they want is not criticism but support to get more inspectors. They are willing to improve the milk supply and we must help them to do it.

I am glad to know that one of the members of this society has been such an ardent worker in passing the milk ordinance, and it is our duty to help him improve the general milk supply.

Some of the distributors of certified milk have been doing something recently that has caused me much inconvenience. Not all the milk has the same percentage

of fat. One of the large distributors in my district delivers the milk from one dairy on one morning and milk from another dairy on the next morning, so that the people get a 3.5 per cent. fat milk one morning and a 5 per cent. fat milk on the next morning. The mothers not only criticize the variation in the amount of cream, but an occasional baby has colic with one milk and not with the other, probably due to the difference in quantity and quality of fat in the Holstein and Guernsey herds. I believe that the Milk Commission should remedy that by insisting that the milk from one dairy should be distributed continuously to one section of the city, and that from another dairy to some other portion. Of course, that necessitates a great deal of extra work, but it should be done because it is important.

Dr. Ella V. Davis: I voice the sentiment of Dr. Hess that we should assist the Health Department to do the best it can. At the present time we must have a mixed supply of milk in order to supply all the people with milk. I believe that pasteurization has done some good. I have used the commercially pasteurized milk all summer and I have had my best results from it. I have improved my facilities for icing and believe that a great deal can be done by teaching the public how the milk should be iced. I believe that the new ordinance requires that the railroads should ice the milk better than they do. We must do all we can to get better results from the present supply of milk.

In the latter part of the summer I tried some certified milk and I found that the bottles were mixed. I had some trouble in getting the dealers to give me the same milk every day. They explained that by saying that they had difficulty in getting the proper amount of milk from the same dairy all the time. They have the same troubles that we have with careless workers and we must take those things into consideration when criticizing.

What we want is a better supply of milk. I worked hard to get the ordinance passed because I was convinced of the value of pasteurization. I have had my own cows, and I can vouch for the truth of the statement that fresh milk is the best possible food if you get it early. My diarrheal troubles all disappeared when I used milk not more than twelve hours old. Being unable to keep my cows I had to go back to the commercial milk, and I began by using certified milk. Then I used the ordinary milk and got equally good results, but I improved my icing facilities. The milk stands in ice water all the time, winter and summer.

The Milk Commission has done a great service to the city in giving two kinds of milk, and I would advise all those who are feeding children to try the Holstein milk. I have had patients use the Guernsey milk without satisfaction, but when they used the Holstein milk conditions improved at once.

A Member: The Milk Commission has done a great work in the line of educating people as to milk. In looking over the notes of physicians who have visited other physicians, I was surprised to learn how many physicians know nothing about certified milk, while others know a great deal about it. This campaign of education will not only do good in acquainting people of the value of certified milk, but it will show them that the best milk is clean raw milk. It is the milk par excellence for their children.

As one goes through the country where these certified milk farms have sprung up it can be seen what a tremendous influence that has had on the neighboring dairies. Men see that that milk supply is better than their own and that they get the highest price for their milk. Then they also clean house. This educational campaign on milk will go hand in hand with all educational work along other lines, and in the end will have a tremendous influence for good.

Dr. J. W. Vander Slice: I am sure that no one would find fault with the Health Department. The finance committee of the City Council cut down the budget of the department so that its hands are tied. We have a very good milk ordinance and Dr. Nance is to be congratulated. He says that it is a compromise ordinance, but it has already done much good. I believe that if we were to pledge our support to Dr. Nance to go before the finance committee and demand that the Health Department be given an adequate sum to carry on this work, no fault will be found with the Department. The very idea that the finance committee dares

to ask the Health Department to inspect 12,000 farms and 154 pasteurizers in the city of Chicago and, I think, 110 outside of the city with six inspectors is a farce. What commissioner could even have the courage to try to enforce such an ordinance?

What I congratulate the profession on is the fact that we had Dr. Nance to push that ordinance through. He must be supported by the profession. He said to-night that he believes in a clean, fresh raw milk. So do we. Every man, whether a member of the Milk Commission or not must admit that we must have graded milk in a big city. The efficiency of the pasteurization is a different proposition. We are not discussing that phase of the milk question.

The point I desire to make is that the Health Department cannot do its duty as it should without sufficient finances, and if the Health Department has no funds the law is invalidated. The distributors of certified milk will deliver milk from any farm daily, if demand for milk from an individual farm is made.

Dr. W. O. Nance: I am glad that I came here to-night because I learned more about the Chicago Milk Commission than I ever knew about it. My work not being along the line of caring for children, I knew little about the work of the Commission. It has done great work, and it should be supported by the profession in its efforts to produce a clean wholesome supply of milk.

It is one thing to pass an ordinance and another to enforce it. But if it is not passed, there is nothing to enforce. I believe that the present ordinance will be enforced. I do not think that it is very difficult to secure sufficient financial backing for the Health Department. The appropriation last year was practically what the commissioner asked for; it was the largest ever given to the department. Two or three months ago a request came before the Committee on Health for nine additional inspectors. The committee endorsed the request and it would have been acted on favorably by the finance committee if it had not been for one matter that came up through a decision of the supreme court which curtailed the finances of the city about three million dollars.

This means economy in all the departments. The Health Department must get along with thirty or forty thousand dollars less, and therefore no more inspectors are being employed. The tendency in the City Hall is to be very fair with the Health Department and it will not have much trouble to get enough money to carry on this work. I believe that when the time comes it will be a good idea for this society to go on record as favoring such a proposition; such an appropriation as the Commissioner would ask for. It would probably assist in getting the appropriation through the budget.

There is no question but that the raw milk is the ideal one for Chicago, but I do not believe that it is possible to get it. Chicago consumes practically a million quarts of milk daily, which comes from 12,000 farms in four different states. It would require an army of inspectors to keep in touch with and watch all these farms to see that the milk is produced under sanitary conditions. The best we can do is to encourage the production of clean milk, and milk that does not come up to that standard should be pasteurized. It is the best alternative. I know that some members of this society do not agree with me on this. We were guided in our work by the report of the New York Commission on Milk Standards. It was the opinion of that committee that pasteurization is the best alternative. If Chicago were one-tenth as large as it is, it might be possible to furnish a clean raw and wholesome milk supply. If every resident could pay fifteen cents a quart for milk it would be a different proposition.

DISTRICT MEDICAL SOCIETY

October 29 marked the thirty-ninth semi-annual meeting of the District Medical Society of Illinois. The meeting was held in the Elks Club Rooms at Pana, and was well attended. The program was lengthy and very interesting. Program:

"The Relative Value of Tuberculin Reactions and Tuberculin Therapy," Dr. Wm. J. Butler, Chicago. Discussion opened by Dr. C. M. Jack, Decatur.

"Possible Danger in Obstetric Anesthesia." Dr. Herbert C. Jones, Decatur. Discussion opened by Dr. A. F. Turner, Taylorville.

"Modern Technic Applied to the Management of Labor in Country Practice." Dr. A. L. T. Williams, Vandalia. Discussion opened by Dr. F. P. Auld, Shelbyville.

The officers of the society are as follows: president, Dr. S. E. Munson, Springfield; first vice-president, Dr. A. F. Turner, Taylorville; second vice-president, Dr. L. C. Littlejohn, Oconee; treasurer, Dr. J. N. Nelms, Taylorville; secretary, Dr. Walter Burgess, Pana. Censors: Drs. W. J. Eddy, Shelbyville; D. D. Barr, Taylorville; F. J. Eberspacher and L. H. Miller, Pana.

FOX RIVER VALLEY MEDICAL ASSOCIATION

Ninety-Fourth Semi-Annual Meeting

(Continued from November issue.)

INVERSION OF THE UTERUS

A. E. DILLER, M.D.

AURORA, ILL.

In speaking of inversion of the uterus, we hold in mind a picture of the fundus of the uterus inverted. The inversion may extend to any degree from a slight depression to a prolapse of the uterus and vagina with the organs lying between the thighs. In the more extensive forms the tubes and ovaries are dragged downward with the hollow uterine tumor.

Generally speaking inversion is divided into two classes, viz.: 1, post-partum, and 2, pathologic. It is the intention of the writer to limit himself to a report of a case of post-partum inversion, and to preface this report by a very brief study.

The variety of this most vicious condition does not permit one to gain much information from the literature. The few statistics available, however, are amply sufficient to impress one mightily with the seriousness of the lesion.

Vogel has given us a classification of the various degrees of post-partum inversion that is both concise and good.

1. Inversion incomplete, in which there is a simple depression at the fundus.

2. Inversion complete, in which the organ is completely turned inside out, and the fundus lies at the level of the external os, or even down the vagina.

3. Prolapsus uterine inversion, where there is a complete inversion and prolapse of the uterus and vagina, so that both organs lie between the thighs of the patient. The case report will be that of the latter type, or condition, prolapsus uteri inversion.

A few statistics will no doubt bear citation at this point.

1. More than 10 per cent. of all cases of inversion are puerperal.

2. About 88 per cent. of all cases are associated with child-birth.

3. This accident occurred but once out of 190,800 cases in the Rotunda Hospital.

4. Beckman tells us that out of 250,000 not a single case occurred in the St. Petersburg Lying-in Hospital.

5. It occurred once in 250,000 cases in the Vienna Lying-in Hospital.

Beckman and Vogel agree that the lesion is found more often in primiparous women, and in those under thirty years of age. This conclusion based on the analysis of 100 cases each. It is of interest to note that more than 50 per cent. of the 200 cases cited by Beckman and Vogel were primiparous women.

Etiology. Factors vary. Probably age is one of considerable importance. Beckman holds, following an analysis of 100 cases, that most lesions are due to violence, and we might add that this violence is probably bred of carelessness or ignorance or both. Vogel, after having made an analysis of 100 cases, holds that most of the lesions occur spontaneously. Now since the majority of cases reported are those from private practice, and very often under the care of midwives, we must not wholly disregard the factor of violence. Again any relations of uterine

musculature or a patulous condition of the cervix must not be overlooked. Increased weight of the placenta is another important factor. Rokitanski suggests a paralysis or failure to contract of the placental site. A centrally implanted placenta may be looked upon as a predisposing factor.

The exciting causes may be summed up under the following:

1. Some direct mechanical pressure exerted from above by effects of expulsion on part of patient:

2. Violent attempts at Credé.

3. Traction on cord.

4. Taylor and Kathenbach cite a case where post-partum development of gas in the abdominal cavity caused a similar condition.

Symptoms vary. Chiefly, however, we find:

1. Internal pain.

2. Profuse hemorrhage.

3. Shock and collapse.

Any one or all of above symptoms may be intensified to a greater or less degree.

Prognosis.—Much depends on the early recognition and promptness with which reduction takes place.

Treatment.—The line of treatment to be carried out must be adapted to the conditions existing in the individual case. The following modes of attack are merely suggested for reduction of uterus.

Manual. Central taxis. Conated hand. Peripheral taxis. Reduction of edema. Lateral taxis. Hour by hour.

Mechanical. Pessaries. Water bags.

Operative. Vaginal amputation of uterus.

Case report. Mrs. L., aged 26 years; 1-para; pregnancy uneventful. External pelvic measurements somewhat above the average. Was said to be "At term." "Pain" began at about 11 p. m., Nov. 13, 1911. Was called in consultation 6:30 a. m. Nov. 14, 1911. As there were no indications calling for instrumental delivery the patient was coached until 3 p. m., when the forceps were applied. Forceful tactics were resorted to which resulted in a complete perineal laceration and no doubt a partial invagination of fundus caused by extreme traction on cord during delivery; at any rate the next sight to greet my eyes was the complete inversion and prolapsus uteri inversion—with parts lying on the bed between the thighs of the patient. Membranes and placenta were beautifully adherent. Patient was in extreme shock. Hemorrhage had been so excessive, that it was difficult to count pulse accurately and patient was gasping anxiously for air.

Treatment.—Membranes and placenta carefully removed and an attempt at replacing the uterine fundus was made. The attempt was of necessity a brief one. The condition of the patient, the contraction which had already taken place and the further loss of blood following vaginal manipulation, called a halt, leaving the uterus lying on the vagina. Patient was cleansed, sterile pads and an abdominal binder applied, windows opened, foot of bed raised and normal salt solution given, per breasts and rectum. At this juncture Dr. H. A. Brennecke was called in and it was decided to wait. On Nov. 15, 1911, the patient's strength permitted her removal to St. Charles Hospital, where under ether anesthesia, the fundus was replaced and packed and lacerations were repaired. In conclusion will state that an abundance of strong sodium water was used in irrigating vagina and all about fundus before any attempt at replacing was made. Patient made slow but uneventful recovery. The uterine packing was gradually removed during first 48 hours, and perineal stitches carefully attended to; but in spite of constant care the perineal work did not prove lasting. Cicatricial tissue formed, however, which permitted of permanent result later. Patient returned to her home day before Thanksgiving, 1911, gradually gaining in strength. Jan. 11, 1912, patient returned to hospital where perineum was for the second and last time repaired together with a right sided laceration of cervix. Patient again returned home

at the end of the 16th day, and appears none the worse for the experience. She menstruated lightly just eight weeks after her delivery and has continued to do so regularly and normally to date. She has also increased considerably in weight. Baby, too, is enjoying the best of health.

DISCUSSION

Dr. Brennecke: This case was one of those unfortunate cases in which the first physician used forceps and then while Dr. Diller was in the next room taking care of the child, that physician delivered the placenta and somehow turned the whole thing inside out. There was a laceration right through the rectum and the inverted uterus practically lay in the rectal laceration so that it was all contaminated. When I was called in that night the woman was in very bad shape. The doctor had reduced the inversion before I got there but on account of the laceration and relaxed condition of the parts the whole thing was reinverted. After shaving and cleaning up as well as possible we used the iodine. Iodine is the best antiseptic we have. Here was an inverted uterus lying in the rectum with all chances for infection; after swabbing the uterus with straight iodine two or three times it was then replaced and the laceration sewed up although we did not expect primary healing. There wasn't a particle of evidence of uterine infection even though the uterus had been turned inside out and lay in the rectum with every chance for infection. I believe that it was the iodine that did the business.

Dr. Bridge: I am quite sure I never had a serious case of this kind but I believe from my observations along these lines that next to violence and roughness the point of fear is important in leading to this condition. We all know that in tears of the cervix we often get hemorrhage and failure of the uterus to contract, and often we get subinvolution.

In some of these cases where surgical asepsis is out of the question the free use of iodine gives splendid results.

I did not understand in regard to this particular case whether the doctor knows whether or not it was a case of violence?

Dr. A. E. Diller: I was giving the anesthetic at the time. The doctor had one foot on the bed pulling on the forceps with all his might and when the baby was delivered the forceps went up into the air with a jerk.

Dr. Bridge: I think we all agree the doctors here deserve great praise for the fine results in this case. I believe next to violence the matter of tears is an important factor.

Dr. Abbott: I have had no practical experience along this line of inversion and hope I never will have. I am quite content to listen to the others talk about these cases.

Dr. Schurmeier: Did you do that sewing up temporarily, thinking of a subsequent operation?

Dr. Brennecke: Yes. The only reason we sutured it at the time we reduced the inversion was because we were afraid it would reinvert on account of the enormous lacerations. Also, we sutured rather coarsely expecting to operate later, and allowed plenty of room for drainage and simply spoked it with iodine. We could hardly expect to get primary union. The prime object was to get out the infection and get as much union as we could to prevent any reinversion.

Dr. Schurmeier: How long after that did the second operation take place?

Dr. Brennecke: I think it was a couple of months. I would always advocate waiting until you get a good scarred cervix before you try to get a good permanent shape. If you wait then you can denude your cervix and get a very nice primary result.

Dr. Schurmeier: The reason I ask the question is because this question has been discussed for and against of late. Some say do the repairing right away and others wait.

Dr. Brennecke: If you have a septic case with bad lacerations I would advise waiting. If there is no reason to suspect that there is contamination then I would advise that the suturing be done immediately and permanently. If you have a

case like this where the uterus is inverted and lying in the rectum with every possible chance for infection then I believe it is better to suture lightly, leaving room for drainage expecting to do the real repair work after there is a healed, well-scarred condition, because even with a light scarring you have not eliminated the bacteria in the sub-tissues.

The Fox River Valley Medical Association held its regular meeting at Aurora, November 18, when the following officers were elected: president, Dr. Bishop, St. Charles; vice-president, Dr. J. R. Tobin, Elgin; secretary-treasurer, Dr. E. A. Diller, Aurora. Delegate to the State Convention, Dr. J. W. MacDonald of Aurora, Alternate, Dr. William Schwengel, Aurora; program committee, Dr. William Schwengel, Aurora, and Dr. A. L. Mann of Elgin.

The afternoon was spent in listening to medical and surgical papers. Dr. A. L. Mann of Elgin addressed the gathering on "The Anti-Tuberculosis Campaign in Kane County."

FULTON COUNTY.

The annual meeting of the Fulton County Medical Society was held October 1 at Canton. A large number of physicians from Fulton County as well as several guests from a distance were in attendance. Papers were read by Drs. E. W. Ryerson and M. L. Harris of Chicago. The following officers were elected for the ensuing year: President, C. D. Snively, Ipava; first vice-president, H. H. Rogers, Canton; second vice-president, I. L. Beatty, Fairview; secretary-treasurer, D. S. Ray, Cuba; membership committee, Arthur Price, Astoria; member board of censors, R. W. Harrod, Avon; delegate to state society, S. A. Oren, Lewistown.

After the meeting the annual banquet of the society was held in the parlors of the Congregational Church, Dr. C. D. Snively acting as toastmaster.

GRUNDY COUNTY

The Grundy County Medical Association held their regular monthly meeting at the Morris Hospital, Morris, Ill., Tuesday, October 29. An excellent paper on "Municipal Sanitation" was read by Dr. Sachse which was full of good things and enjoyed by his hearers. Drs. Hart and Stockdale of Coal City, and Dr. Brinkerhoff, of Minooka, Ill., were present besides all the Morris physicians. A lunch was served at the close of the session.

HENDERSON COUNTY

The semi-annual meeting of the Henderson County Medical Society was held November 4, in the office of Dr. H. L. Marshall at Stronghurst, Ill. The members of the society in attendance were: Drs. Marshall, Harter and Bond of Stronghurst; Dr. W. J. Emerson of Carman, and Dr. J. P. Riggs of Media; Dr. J. F. Percy, E. I. Franing and E. N. Nash of Galesburg; H. V. Prescott, W. H. Scott and Dr. Oprea of Dallas City, Dr. Ralph Graham of Monmouth, Dr. L. H. Nickerson, of Quincy, president of the State Society, was also present and read an interesting paper, "Headaches."

Dr. J. F. Percy of Galesburg read a paper on "The Treatment of Bright's Disease," and Dr. Ralph Graham of Monmouth, read a paper on "Diseases of Children."

The next meeting will be held at Stronghurst, during the month of May, 1913.

HENRY COUNTY

The meeting of the Henry County Medical Society was held at Geneseo, Oct. 17, 1912, and was largely attended. The following program was given: "One Hundred Cases of Obstetrics," J. N. Downs, Annawan. "The Tonsil, from the Standpoint of the General Practitioner," C. A. Coffin, Kewanee. "Report of a Case of Grave's Disease," C. S. Young, Geneseo. "Herpes of the Eye," H. J. Stewart, Kewanee.

JO DAVIESS COUNTY.

The regular quarterly meeting of the Jo Daviess County Medical Society was held at Warren, Ill., Oct. 31, 1912. Members present: Stafford, Tyrrell, Kreider, Hoffman, Hillard, Leitzel, Fleege, Melhop, Clark, Moes, Snyder, K. F. Keller, Bucknam, Stilson, Smith, I. C., Smith D. G. Nadig, Miller, Walker, H. T. Renwick, Kaa, Cottingham, with Logan of Elizabeth, Harlan of Freeport and Salter of Lena as visitors.

Drs. P. W. Leetzel of Benton, Wis., C. C. Gratiot of Shullsburg, Wis., J. M. Walker of Dubuque, Ia., and J. M. Stilson of Apple River were elected to membership. On account of the unavoidable absence of Dr. J. H. Stealy, Dr. Harlan appeared and read the valuable paper of Dr. Stealy on "Pernicious Anemia." The blood changes were beautifully shown on photos and stereopticon slides, and was without doubt a masterly presentation of this subject.

Dr. H. T. Walker of Dubuque reported two very interesting cases and showed x-ray plates of a fracture and application of the Lane's splints, which added much interest to the meeting. The attendance at this meeting was very good and such papers as the above should not be missed by a single member.

The Warren Division did honor to themselves by entertaining the society at a banquet prepared by the ladies of one of their leading churches. This was an elegant affair and everyone did ample justice; the best of fellowship and good will prevailed.

The next meeting will be held at Stockton, Ill., in January, 1913.

KNOX COUNTY.

The annual meeting of the Knox County Medical Society was held in the courthouse, Galesburg, October 18. Two were received into membership; Dr. R. C. Montgomery, Wataga, and Dr. R. J. Bedford, Dahinda. The report of the secretary-treasurer showed a balance at the beginning of the year of \$18.21 above all indebtedness. Bills to the extent of \$113.99 were audited and allowed.

The annual election for 1912 resulted as follows: president, Dr. W. O'R. Bradley, Galesburg; vice-president, Dr. A. C. Keener, Altona; secretary-treasurer, Dr. G. S. Bower, Galesburg; censor for three years, Dr. B. D. Baird, Galesburg.

Dr. C. E. Beecher of Gilson then gave his presidential address on "The Doctor and His Vacation." It "smelt of the piney woods," with which he is so familiar and was so well liked that it was printed in full in a local paper.

The society then adjourned for lunch, not having the pleasure of having Dr. W. A. Evans with them as the latter was detained on the road. After lunch the scientific program was resumed.

Owing to the unavoidable absence of Dr. Fred Ewing his paper on "The Diagnosis and Treatment of Infections of the Urinary Tract" was read by Dr. Bartlett. It is of exceptional merit and elicited much discussion. We trust to see it published as it is well worth publication.

Dr. Albert C. Croftan of Chicago gave a very interesting talk on "A Promising Method in Pernicious Anemias." He showed the great good he had derived from the administration of very large doses of hydrochloric acid. His statistics covered about 150 cases and shows over half of them apparently so well that their only evidence of the disease is that they must continue taking the acid, though in much smaller amounts. He offers to give complete directions to anyone writing him, asking in return only that he or she makes known the results, whether favorable or unfavorable, that he may add to his statistics.

Dr. J. F. Percy of Galesburg then spoke on "A Preliminary Statement of a New and Probably Efficient Method of Treatment of Nephritis." In a case of nephritis complicated with deficient thyroid activity three years ago the doctor used thyroid extract and was surprised to find the urine clearing up. Trials in other cases, thirty-five in all, have showed such wonderful results in the way of lowered blood-pressure, disappearance of urine and casts, and return to apparent health, that he believes he has made a discovery of remarkable value. So far as he knows

the use of thyroid extract for this purpose is original with him and a further statement will appear in an early number of the *Journal A. M. A.*

President Nickerson of Quincy then gave an instructive talk on "Pruritus."

The society was then fortunate in being addressed, only too briefly, by Dr. Luther H. Gulick, who has the direction of the physical culture of nearly a million school children in New York. Dr. Gulick was here to address the teachers' association and our only regret was that he had not an entire evening to devote to us.

The last speaker was Dr. W. A. Evans of Chicago who talked as only he can. He spoke particularly of state medicine and predicted that the matter of state health insurance now so vitally interesting to our British brethren, will ere long make its appearance here. He advised that instead of allowing selfishness to make a losing fight against a solution that is sure to come, we meet the problem of evolution in a scientific and intelligent spirit.

These talks were all live. There were no rehashes of book articles. They were of the kind that make for interesting meetings; meetings from which one goes away benefited and pleased at having been present.

The following members were in attendance: Baird, Bohan, Bartlett, Bradley, Beecher, Birmingham, Bower, Browning, E. H. Bradley, Becker, Bedford, Bryant, Chalmers, Finley, H. W. Giles, Horrell, Hertig, Hilton, Johnson, Keener, Longbrake, W. H. Maley, Matheny, Miner, McClanahan, Montgomery, Percy, Pollock, Quaife, Ripley, Stewart (31). Thirty-seven visiting physicians were in attendance making 68 in all.

The members and their wives and guests were invited to the evening banquet at the Elks' Home. Forty-one sat down to a dinner handled with the ease and neatness for which we have grown to look from the steward of that organization. Dr. Percy presided. After-dinner talks were made by a number. President Nickerson made a plea for a more thorough state organization; Dr. Kirkland gave a number of inimitable Swedish dialect stories; Dr. Hurt, president of Lombard, made a pleasing talk; and Dr. W. A. Evans, of Chicago, at greater length dwelt on the relations between Dr. Wiley and the Referee Board.

It was a good day.

G. S. BOWER, Secretary.

LA SALLE COUNTY

The semi-annual meeting of the La Salle County Medical Society convened in Peru, at the Public Library building, Oct. 22, 1912. Present, President Blanchard, Drs. Massman, Wooley, Orr, Sexton, Farney, Ensign, Dicus, Lester, Love, Perisho, Cressman, Clark, Vaughn, Naumann, Ballenseifer, Etzbauch, Leland, Burrows, Roberts, Parr, Geen, Crowley, Fullenweider, Landgraf, Jamieson, Greaves, Guthrie, Mangle, Burke, Sterrett, Yoder and La Due.

Dr. Blanchard called the meeting to order. Dr. Roberts presented some cards to the members on the tuberculosis question to give to people in the county who were entitled to county aid or partial aid.

Moved by Dr. Ensign that \$50 be appropriated and paid to the retiring secretary, A. J. Roberts, as a fitting recognition of his services as secretary. Carried.

Dr. Valentine Massman of Marseilles presented his application for membership. When it was learned that he now is a member of the Chicago Medical Society, it was moved and carried that upon the presentation of transfer card from the Chicago Medical Society the secretary be instructed to place his name on the roster.

Dr. H. M. Orr of La Salle presented a paper on "Fixation of Floating Kidney after Decapsulation." This paper was well received and was discussed by Dr. Collins of Peoria. In the discussion the fact was brought out that some operators now operate by placing the patient on his belly instead of on the side.

Dr. Collins presented a paper on "Bowel Obstruction." This paper was illustrated by many charts showing the various kinds of obstruction. The percentage of recovery where the operation was performed early was nicely illustrated. This paper was discussed by Drs. Roberts, Perisho, Percy and Dicus.

Dr. J. W. Vander Slice read a paper on "Indigestions of Infancy." This paper went exhaustively into the subject of causes and was extremely well received.

This was discussed by Drs. Greaves, Clark, Crowley, Sexton, Weis, Love, Roberts and Percy. In closing Dr. Vander Slice dwelt at considerable length on cow's milk feeding, showing where artificial food had an apparent advantage though it was no better nor as good as modified cow's milk.

Dr. J. F. Percy, of Galesburg, read a paper on his treatment of "Carcinoma Uteri by the Actual Cantery." He showed his instruments and explained in detail his operation. He illustrated his paper by narrating the work done by him in curing a case that had not been relieved by other methods. The most of this work is entirely original with him and the Society appreciated his presentation of the subject very much. He showed that the expectation of life was lengthened materially by this method; that supposed inoperable cases were treated successfully. He burns from below with the hand of an assistant in the abdominal cavity above, acting as a guide by the temperature felt through the uterine walls and to prevent any harm to the rectum or bladder.

It was moved, seconded and carried that Dr. Perisho's paper be postponed to the next meeting. A rising vote of thanks was given to the essayists for their kindness in coming before our Society. It was moved, seconded and carried that the secretary send to each of the essayists a check covering their expenses to the meeting.

E. W. WEIS, Secretary.

LEE COUNTY

The Lee County Medical Society held its meeting at Dixon, Ill., November 14 in the city hall. President C. A. E. LeSage presided and A. F. Moore acted as secretary. About fifteen physicians were present besides a number of nurses. Among those from out of town were Drs. Keefer of Sterling, Dr. Cheattle of Ashton, and Dr. White of West Brooklyn. The society was addressed by Dr. Frank X. Walls, of Chicago, on the subject of "The Care and Feeding of Infants."

After the program the election of officers took place which resulted as follows: president, Dr. A. F. Moore; vice-president, Dr. George P. Powell; secretary, Dr. C. H. Bokhof.

MACOUPIN COUNTY

The Macoupin County Medical Society met in regular quarterly session in the Masonic Hall in Palmyra, Ill., Oct. 22, 1912, and was called to order by Vice-President Dr. J. B. Liston, of Carlinville.

The forenoon session was devoted to business and clinics. Drs. I. H. Neece and W. L. Powell were reported on favorably by the Board of Censors and were elected as members of the Society. The application of Dr. E. J. Peek of Modesto to become a member was received and referred to the Board of Censors.

The Palmyra physicians entertained the visiting doctors at the home of Dr. Ben Hudson, at a luncheon. This luncheon was of such a quality and served in such a tempting manner by Mrs. Hudson that she received many compliments.

The meeting was called to order again at 1 p. m. by President Dr. J. W. Morgan, of Virden. Dr. I. H. Neece, of Palmyra, gave a very interesting paper on "The Effects of Adenoids on Physical Development." A general discussion of the subject followed in which all took part.

Dr. George F. Stericker, of Springfield, gave a very able and instructive paper on "The Clinical Aspect of Gastric Ulcer." In his explanation Dr. Stericker stated that in all serious pathologic conditions of the stomach the most common symptom is that of vomiting. That the ulcer is more common in the pyloric end of the stomach. When the vomiting is preceded by pain and the pain relieved by vomiting, and when acid injected into the stomach produces increased pain, we have a cardinal symptom of gastric ulcer. Pain is always present in gastric ulcer. The vomiting is always acid. The pain occurs immediately upon taking food into the stomach or very soon after. The most common complication is perforation, and in this case immediate operation is demanded. Acute cases of gastric ulcer are all medical. The treatment for all cases is rest in bed for several weeks, careful

dieting, and hygiene; giving bismuth or alkalies to neutralize the acidity of the stomach. Sometimes rectal feeding is necessary. The giving of opiates is to be avoided as much as possible to prevent constipation. A general discussion of the subject followed, and Dr. Stericker answered many questions asked by the different doctors present.

On account of the bad weather only a small attendance is recorded but considerable interest was manifested by those present.

Those present were: Drs. G. F. Stericker, Springfield; J. W. Morgan, Virden; J. B. Liston, Carlinville; J. L. Kerrell, Shipman; J. A. Kennedy and E. J. Peek, Modesto; W. B. Dallan and J. D. Doan, Scottville; J. C. Maxfield, Barr; Ben Hudson, M. McMahon, I. H. Neece, W. L. Powell and E. W. Crum of Palmyra.

After thanking Dr. Stericker and Dr. Neece for their papers and the doctors of Palmyra for their entertainment, the society adjourned to meet in January.

MADISON COUNTY

The Madison County Medical Society met in Granite City Sept. 6, 1912, with Dr. E. C. Ferguson in the chair. Members present: Drs. Smith, Barnsback, Burroughs, Robinson, Oliver, W. H. Grayson, Duggan, Reuss, Hastings, Sims, Everett, Theodoroff, J. W. Scott, R. B. Scott, Wedig, Binney, Gwynn, Luster, Ferguson, Zoller and E. W. Fiegenbaum. On motion of Dr. Duggan, seconded by Dr. Smith, a donation of \$25 was made to the Madison County Centennial Association. The speaker of the day, Dr. George N. Kreider, was introduced and spoke on "The Pathology of the Living," developing the fact that the diagnosis of diseased conditions of the organs, sometimes not suspected, should be made during life and proper remedial measures adopted. A unanimous vote of thanks was offered to Dr. Kreider for his visit and address, also to the local lodge of Elks for the use of their splendid hall. On motion adjourned to meet in Edwardsville on the first Friday in October, 1912. E. W. FIEGENBAUM, Secretary.

A novel feature was introduced at our November meeting which was held in Madison. The editors of the county had been invited to furnish the program and Mr. J. W. Cassidy, editor of the *Granite City Press-Record* read a very well written and interesting paper on "The Relation of the Press to the Medical Profession." The discussion was opened by Mr. Chas. H. Spillman, editor of the *Edwardsville Intelligencer* in one of the best expositions of this much debated question. The discussion became general and very interesting and many of our members spoke on the question bringing out the medical viewpoint, being heartily answered by the journalists present. Everything touching the relation of the doctor to the local newspaper; all advertising, public press notices, etc., was given a thorough airing and many doubtful points settled at this meeting. A vote of thanks was tendered the newspaper men for their much appreciated efforts and a motion to have the leading paper printed in the *ILLINOIS MEDICAL JOURNAL* was adopted. Dr. M. W. Harrison presented plans and photographs of a tuberculosis camp that he is establishing near Collinsville. Dr. George L. Sharp, of New Douglas was admitted to membership. About 20 members were in attendance.

E. W. FIEGENBAUM, Secretary.

McHENRY COUNTY

The regular meeting of the McHenry County Medical Society was held in Woodstock on August 14. Dr. Nickerson, of Quincy, president of the Illinois State Medical Society, was present and gave an interesting paper. A committee appointed at the last meeting to draft resolutions relative to the death of one of the members, Dr. W. H. Doolittle, reported, the society adopting the report by a unanimous vote, as follows:

Resolved, That by the death of Dr. William H. Doolittle we are called upon to lament the decease of one of our most prominent members. For twenty-two years he was a resident of Woodstock, in the active practice of his profession. His

career as a physician has been marked by an ardent love for his profession, sincere devotion to those entrusted to his professional care, and by an unswerving integrity and honesty. In his intercourse with his professional brethren he was always courteous and strictly ethical, and as a citizen he enjoyed universal respect and esteem.

Resolved, That we, as his professional brethren, desire to place upon record this testimonial of our appreciation of his personal worth as an associate and a citizen.

Resolved, That we tender to the family of the deceased our sincere sympathy and condolence.

Resolved, That a copy of this report be transmitted to the family by our secretary, and that it be printed in the weekly papers in Woodstock.

Signed, E. WINDMUELLER, M.D.

A. B. SMITH, M.D.

C. M. JOHNSON, M.D.

Committee.

Present at this meeting were Drs. Nickerson of Quincy, Bailey and Brown of Hebron, Curtis and J. I. Wernham, of Marengo; Johnson, of Harvard; Foster of Richmond; Wells and Nye of McHenry; Stattler of Huntley; J. C. Ward of Chemung; Windmueller; Anderson, Smith, Seelye, Francis and Thon, of Woodstock.

The annual picnic meeting of the McHenry County Medical Society was held at Leonard's Hotel, Crystal Lake, on Tuesday, September 24. Dr. A. C. Cotton, of Chicago, was present and read an interesting paper on "Anterior Poliomyelitis."

After the regular session a bountiful repast was served to about 40 members, their wives and guests. After the dinner a good social time, including dancing, was enjoyed.

Those present were: Dr. and Mrs. A. C. Cotton, and Dr. VanDerslice, of Chicago; Dr. and Mrs. Abbott, Dr. and Mrs. Mann, Dr. Ward, Dr. and Mrs. Scheuerman, and Dr. O. L. Pelton, Jr., of Elgin; Dr. DeWire of Sharon, Wis.; Dr. and Mrs. H. D. Hull, Dr. and Mrs. Freeman, of Crystal Lake; Drs. Nason and Pillinger of Algonquin; Drs. Nye and C. H. Fegers of McHenry; Dr. and Mrs. E. V. Brown of Hebron; Dr. and Mrs. Wernham of Marengo; Dr. and Mrs. Windmueller; Dr. and Mrs. J. E. Guy, Dr. and Mrs. A. B. Smith, Dr. and Mrs. West, and Drs. Francis and Baccus of Woodstock.

MCLEAN COUNTY

The October meeting of the McLean County Medical Society was one of special interest and well attended. Those who failed to attend missed an inspiration worth while. Doctor Meyers gave an address on the garbage question which was full of interest, not only to the doctors but to every resident of the city. He contends that the garbage question is second to none when it comes to maintaining a high standard of health in the city, and that the present system is a menace to the health of our people. The doctor seems to be thoroughly posted, having investigated the methods used in many cities. His heart is in the right place and would give us the most modern methods if he were just allowed sufficient funds and a free hand in the matter. It seems to us now that it is purely a political matter, and if each doctor would take the matter up with his alderman we would influence them to better things.

Professor Woods gave a very pleasing and instructive address on the needs of a city laboratory in the hands of a competent bacteriologist who could spend his entire time at the work.

Dr. Edmonson, mayor of Clinton, was present and gave us a splendid address. Clinton is under the commission form of government and he reports it to be much more satisfactory than under the old form of government, and we feel that the doctor should know as he has served the city under both forms of government.

MERCER COUNTY

The Mercer County Medical Society held its meeting Tuesday, November 19, in the court house at Aledo, when the following program was given: "Meningitis in Infancy," Dr. R. H. Smith, Seaton; "Delegates Report of Illinois State Meeting," Dr. V. A. McClanahan, Viola; "Anesthesia," Dr. Chauncey Sherrick, Monmouth; "Our Carelessness in Diagnosis of Emergency Cases," Dr. Frank Eyre, North Henderson.

Dr. W. L. Karcher of Freeport delivered a lecture with illustrations by lantern slides, on "Pernicious Anemia, a Review of Sixteen Cases."

MORGAN COUNTY

The regular November meeting of the Morgan County Medical Society was held at the public library, Thursday evening, November 14, at Jacksonville, Ill., with the following present: Drs. Adams, Black, Bowe, Cole, Grouch, Hairgrove, Pitner, Woltman, Ogram and Stacy, and Drs. Foley, Blair, Leonard and Pratt from the State Hospital. The meeting was given over to reports of cases that occur in their different practices. The advantage to be gained by systematic cooperation in the study of hospital and private practice cases was thoroughly brought out. By such cooperation the fullest scientific, educational and beneficial results both for the patient and the physicians and surgeons are to be obtained. The meeting was very profitable for all who were so fortunate as to be present.

PIKE COUNTY

The regular October meeting of the Pike County Medical Society was held October 31, at Barry, in the G. A. R. Hall. Dinner was served in the dining-room by the ladies of the Baptist Church. Members present were:

Drs. Harvey, Main, Peacock, Beavers, Dechow, Kinney, Shastid, Kuntz, Kaylor, Collins, Rainwater and Duffield.

In the absence of both president and vice-president, Dr. Harvey was elected to preside. The application for membership of Dr. F. N. Wells by transfer card from DeKalb County, Ill., was favorably considered, and Dr. Wells was elected a member of our society. The application of Dr. John W. Turner by transfer card from Pike Co., Missouri, was on motion laid over until next regular meeting.

In the regular program Dr. R. J. Christie of Quincy, read a paper on his way of "Adjusting Splints for Fractures of the Radius at the Lower End." This was well received and thoroughly discussed. Dr. W. W. Kuntz, of Baylis read a paper on "Peritonitis With the General Practitioner." Dr. C. E. Beavers of Barry, reported a case of unusual parasitic intestinal disease.

Thanks were voted Dr. Christie for his part of the program, and also the ladies for their efforts in our entertainment. Society adjourned subject to call of secretary.

SANGAMON COUNTY

The regular monthly meeting of the Sangamon County Medical Society was held at the Leland Hotel, October 14. Dr. E. E. Hagler read a paper on "The Workmen's Compensation Act of Illinois." An abstract of Dr. Hagler's paper follows:

It is the general opinion that the total amount which can be collected under this section is limited to \$200, including the hospital bills and medicine. This is not true as the law read, "also necessary services of the physician or surgeon during such period of disability, unless such employe elects to secure his own physician or surgeon." This clause "also necessary services of physician or surgeon during such period or disability" has been called the "joker" of this law.

A well known authority on guarantee and accident insurance says: "You will note it requires the necessary services of a physician or surgeon during such period of disability, such period may be a long one—in fact may last for many years. Therefore, in addition to the first medical or surgical treatment, a hospital of a grade to suit the tastes of the injured employe, whether in ward or private room, for eight weeks, you also furnish the services of a physician or surgeon so long as the injured employe continues disabled."

It is conceded that the authors of the bill did not intend so broad a coverage, but there is no uncertainty in the way the law reads, and there is likely to be great difficulty in any effort to amend it.

In discussing the attitude of the insurance companies toward the medical profession, the next point taken up, the speaker said that the insurance companies were in many cases driven to the making of bargains with some physicians because these physicians made charges in injury cases that were out of proportion to the amount of services rendered. He expressed himself as being of the opinion that the adjustment of fees will be specialized when the legislature of the state sees fit to amend the present law or passes a law for state insurance.

Dr. Hagler concluded his paper by recommending to any member of the profession who has a case of accident that comes under the workman's compensation law, to make a careful record of such case, as he might be called at any time to testify. Also he should be sure to notify the employer that the injured person is under his treatment, thus placing the responsibility.

SOUTHERN ILLINOIS MEDICAL SOCIETY

The Southern Illinois Medical Society, which held its meeting at Cairo, Ill., closed its work by electing officers, and selecting DuQuoin as the next meeting place. The officers elected were: president, Dr. H. E. Wilson, Centralia; vice-president, Dr. W. E. Lingle, Cobden; treasurer, Dr. J. W. Armstrong, Centralia; secretary, Dr. C. W. Lillie, E. St. Louis.

ST. CLAIR COUNTY .

The St. Clair County Medical Society held its regular quarterly meeting at Belleville, Ill., Thursday, October 4, 1912, with vice-president C. A. W. Zimmerman in the chair. The following members were present: Drs. Hansing, A. Bechtold, Scruggs, Hilgard, A. B. Crum, Fairbrother, J. W. Twitchell and E. B. Twitchell, Walter A. Dew, VanBoyd, D. R. Duey, Chas. J. Rayhill, E. P. Raab, Eisele, G. C. Otrich, Lippert and B. H. Portuondo. Drs. Caulk, Hughes and Green attended the meeting as visitors.

Minutes of the preceding meeting were read and approved. Dr. J. Caulk read a very able, scholarly and interesting paper on "Diseases of the Prostate Gland" that was listened to with great pleasure and discussed by most of the doctors present. Dr. E. P. Raab reported a most interesting case of tuberculosis of the right kidney, with recovery and presented the diseased kidney. This was also most thoroughly discussed.

In the absence of the Board of Censors the chair appointed Drs. Eisele, Dew and J. W. Twitchell to act for this meeting. The applications for membership of Drs. Stevens and Green were favorably reported by the Board of Censors, and they were elected to membership. The society then adjourned to meet again in January, 1913.

STEPHENSON COUNTY

The Stephenson County Medical Society held its Autumnal Meeting in Freeport Thursday, Nov. 7, 1912. At noon luncheon was served at the Freeport Club in honor of the principal speaker of the day, Dr. Frank P. Norbury, Alienist to the Board of Administration at Springfield.

The Program: "Psycho Neuroses: Their Present Status and Treatment." Frank P. Norbury, A.M., M.D. "The Treatment of Post-Abortum Infection." Karl F. Snyder, M.D. "Nystagmus." W. J. Rideont, M.D. "Some Observations Relative to the Lachrymal Sac." J. Sheldon Clark, M.D.

The matter of the circulation of the journals from the library was taken up and it was decided to refer this to the Library Committee with power to act. A vote of thanks was extended Dr. Norbury for his very edifying paper. Those

present were the following: Drs. Snyder, Rideout, Saucerman, J. W., Arnold, Pettipiece, Hutchins, Linda K., Hewetson, Rosenteil, Distlemcier, Leavy, Burns, Stealy, Kareher, Harlan, Poling, Smith, Mease, Peck and Clark. Visitors: Dr. Thomas L. Packard of Lanark Dr. Jesse C. Akins, Forreston, Dr. O. F. May, Shannon, and Dr. Mary L. Jordan, of Monroe, Wisconsin.

J. SHELDON CLARK, Secretary.

THE PSYCHONEUROSES; THEIR PRESENT STATUS AND TREATMENT

FRANK P. NORBURY, A.M., M.D.

SPRINGFIELD, ILL.

I can only give you a résumé of the great amount of research work done in recent years and must necessarily limit my comments to the most important contributions, which have modified the views regarding the psychoneuroses which have hitherto prevailed. The changing attitude which modern psychologic medicine displays, in its endeavor to assimilate the valuable and constructive features of new work, is in keeping with the genuine educational spirit manifest in all avenues of medical research.

Before entering on the discussion it is first incumbent that I define what is meant by psychoneuroses and then also elaborate the principles (psychologic) on which are established their study.

By the psychoneuroses is meant mental disorders, due to some derangement in the functioning of the nervous system, without recognizable changes in the organs of the body. Included in this definition are hysteria, psychasthenia, anxiety psychoses, etc. I do not include neurasthenia for it is, in my judgment, a separate and distinct entity belonging to the fatigue neuroses. While it is true that hysteria also has a fatigue basis, yet it has more, and carries with it a profound psychologic etiologic factor. Neurasthenia in the light of its modern conception needs a recasting, which must include both lines of inquiry (psychologic and physiologic).

Janet says, "Fatigue is the starting point of all great neuroses," and with this background I am sure as your experience increases, you can give an accounting for all of the major and minor ailments coming within the scope of the psychoneuroses, wherein we note the variation to be in degree and not in kind.

To insure a neurosis there must be proper soil—a certain psychic attitude or susceptible condition of mind which, directly or indirectly, is the outgrowth of exhaustion, either in the patient himself or his forbears. To develop a neurosis upon such a soil the individual needs an environment which is calculated to cause mis-adaptation, through faulty training, over-stimulation of the emotions, through psychic shocks—or other disruptive experiences, cultivation of faulty beliefs and unsocial conditions in general which affect conduct, or at least give undue consideration of self, with relation to physiologic functions of the body.

These, and a host of other possible conditions, largely individual, which, directly or indirectly, through psychologic avenues, lay the foundation for and contribute to the superstructure of the neurosis in its building. This building-up process is, through the association of ideas, feelings, emotions, etc., leading to what we term complexes, which exist in every form of psychoneurosis and are the chains which constitute the neurosis. To grasp the growth of this chain it will be necessary to understand the psychologic principles underlying its evolution. It is through the painstaking methods of the research worker that these principles have been developed—the technique of which is of equal importance with the technique of the surgeon, or the laboratory worker in other fields of clinical pathology. For this reason I want to briefly state the principles and later to show you the methods or technic of inquiry into the study of the complexes.

Morton Prince tersely states the complex formation as follows: "It is a law that associated ideas, feelings, emotions, sensations, movements, visceral functions of any kind, tend after constant repetition, or when accompanied by strong emotion and feeling tones and other conditions, to become linked together in a system or group in such a fashion that the stimulation of one element in the

group stimulates the activity of the rest of the group. This group is called a complex. This tendency of linking of function obtains whether the complex is for or against the well being of the individual. This can be noted in normal associations and especially is it pronounced in the abnormal where the individual misadapts himself to his environments.

You doubtless recognize the "association of ideas" is normal as when in your own experience one idea has suggested another and so on back into the deep recesses of memory if you will but center your attention upon the inquiry.

We also notice that associated in this complex are varying moods as we pursue our inquiry, we see the emotions in their various degrees of eruption, we even notice physical accompaniments adequate in their reactions to these emotions. Carry, if you will, your observations further and into realms of the abnormal and you will see obsessions, phobias, fixed ideas, imperative conceptions, etc.

The syndrome, the complex formation involves, as we thus see, not only psychic but physical factors, as well. These complexes have been formed through educational ways and means, their adaption is through the avenues of intellectual acquirement, in other words, the individual is educated and the complexes are the result of this education whether it be for good or evil. The process is the same and to study the normal or the abnormal complex we will follow the same route.

Prince well says, "The education of the mind and body depends on the artificial synthesizing of functions into a complex adapted to the end or useful purpose. By the same means principal functions may be synthesized by education into a complex which does not serve a useful purpose, but is harmful to the individual; when this occurs we call it abnormal and it then becomes a psychoneurosis.

This psychoneurosis is functional—it is a perversion of a normal process brought about by some acute, intense experience, or by constant repetition of an experience, i. e., by education.

In the further study of these complexes we have by means suggested by Jung been able to study the associations of ideas, feelings, etc., by what is known as the "Association Method," whereby these constellations may be discovered—and then by the clue thus given a more elaborate and exhaustive psychoanalysis made by the method of Freud—giving relief to the individual who held in the thrall of abnormal complex has his usefulness, comfort and happiness jeopardized thereby.

To understand the "Association Method" we must consider another principle (psychologie), which is concerned in all associations and that is the conservative principle of memory. "All of our experiences, anything that we have thought, seen, or heard, or felt, is conserved in such a way that we can reproduce it in a form approaching that of the original experience. Through memory all experiences are conserved—not lost—to consciousness, but called back to consciousness through the processes of memory. There is always this tendency in memory experience to reproduce at least the residue of experience thoughts, etc., in a form of a complex. This form we call "unconscious complex." This complex includes not only psychic experiences, thoughts, etc., but the physiologic reactions to such thoughts, showing that the nervous system like the phonograph, faithfully records in the matrix, and reproduces when called upon, the impressions, etc., under stimulation. The unconscious experiences are conserved and may be reproduced by stimulating the residue. When these complexes are unhealthy we call them obsessions, phobias, which in truth are faithful reproductions or may be substitutions for reproductions of past experiences—they form the basis of the association psychoses—the anxiety psychoses, the defense psychoses.

Prince emphasizes, as does Janet, the next principle which we must consider in order to grasp the climax of pathologic functioning noticed in psychoneuroses—dissociation. It really is a part, or the sequel of memory conservation. We all know that it is normal for us to have a long period of time blotted out of memory—but there is a residue which can be called into consciousness by insistent means or artificial means. What has happened to blot out of memory experiences, etc., is a dissociation—an inability to synthesize the experiences. Amnesia results and it includes not only memory but dissociated systems of complexes, including motor and sensory functions—as seen in palsies and anesthetics in hysteria. That

such dissociation is functional is seen in the fact that they can be produced by suggestion and removed by suggestion.

Emotions are powerful factors in producing dissociations as shown by Janet in his study of the major forms of hysteria. Here complexes are formed, conserved and dissociated through emotional experiences. Dissociated personality in Monoideic Sonnambulism—as the studies of Sidis, Prince, and others, are examples of unconscious complexes cut off dissociated from consciousness.

Automatism begins largely in all complexes—both conscious and unconscious. We see automatism in our own acts—language, symbols, etc., become set in phrases. Every people, it is said, have their own provincialisms which are more or less evidences of automatism. Families have certain expressions of speech, conduct, habit, etc. Language automatism, of which profanity is a marked example, are quite common. But what concerns us are the deep, less conspicuous complexes which are automatisms, and which are revealed in the association tests of Jung—and which give us the clew to pathologic ideas which rush into consciousness unbidden and undesired. Fixed habits of thought, ideas, beliefs, etc., are thus brought to light through the mechanism of automatisms.

When, through dissociation, the inhibitory control of personal consciousness is lost, then we find automatism in its most interesting development. Here we see split off elements which give rise to subconscious ideas—generate hallucinations. (sensory automatisms) ties, spasms, convulsions, contractures (motor automatisms). Such phenomena are marked dissociations—and when reassociation takes place, as it does through marked suggestions, the cessation of the stimulus occurs, the automatism disappears, and the invalid for years takes up his bed and walks. The reassociation then has a definite psychologic significance and explanation, showing a formation of a new and healthy complex which gives well being, and not invalidism, to the patient.

From the foregoing we see that emotional, or feeling tone, must necessarily be a part of a complex. It is a fact that, as Prince tells us, intense sthenic emotions and feelings are accompanied by increase of vital functions—also the contrary, that depressed emotions and feelings cause a decrease of vital functions. Further, as James has taught us, "All ideas have a feeling tone attached to them."—Emotional and feeling tones enter into all complexes—and reaction is in keeping with these tones—personal consciousness reveals the nature and character of these tones.

Depressing emotions, emotional or psychic shocks, may dissociate personality, cause a splitting off, altering personality, producing sensory dissociations, anesthetics, etc. These dissociations from overwhelming emotional shocks lay the foundation for defined psychoses. Depressive memories, ideas, complexes, rush in to cause anxiety psychoses. Emotional tones have to be reckoned with in all psychoneuroses, and if we can by re-education or psychic analysis bring about restoration to a normal complex—breaking up the old—we have laid the foundation for recovery, because we have found the *dis* and have removed it so that *ease may follow*.

We have reviewed principles found both in normal and abnormal psychology—the mechanism is the same in both. It is the study of this mechanism which is the later day, or newer, psychology—the psychology of Freud and of Jung. A practical psychology which is receiving much deserved attention in the study of the psychoneuroses.

Freud uses purely psychologic methods founded on the principles I have stated to you. Freud teaches that the complexes are made up of three elements:

First—Intellectual elements.

Second—Emotional or affection tone.

Third—Certain conative tendencies.

These elements make up the complex as a whole. Freud says these complexes are permanently present but not constantly active—only become so under certain conditions.

A complex only becomes active when stimulated in some way. This stimulation occurs whenever one or more of the ideas belonging to the complex is aroused

to activity either by some external event or by some memory association occurring, of course, within the mind itself, as in dreams, etc. The effect of a complex on conduct is in direct proportion to feeling tone. When this intensity is very high the complex makes its influence felt almost constantly upon the flow of thought and action. The effect of complexes upon thought has been experimentally demonstrated by Jung in his well known association tests.

Jung in his address before Clark University two years ago, and more recently in New York and Chicago, demonstrated his method clearly and those of you who have experimented in this field have found, I am sure, a well spring of information in the study of psychoneuroses. Jung has many followers in this country.

By this method, tapping the complexes, and then by the analytical method of Freud, unravelling the complexes, giving a re-education to personality and once more setting the individual straight in the path of life.

Jung's method is preliminary to psychoanalysis. By this method it is shown what is meant by complexes—by memory conservation—by feeling tones—and by automatism.

The study of the reaction time to stimulus words will show whether these complexes are out of harmony with the remainder of the personality. This may be because of emotional tone or conative trends are opposed to personality as a whole—or because of being incompatible with reality. A complex may exist and the individual not know it is a source of anxiety—because like a foreign body he has tried to throw it off—here by “repression.” In its minor degrees repression is common enough in every day life; to find it in striking degree one must study the abnormal. It is generally seen whenever some emotional event of an intensely painful nature has occurred. Under such circumstances the individual will endeavor to repress the offending complex; try to forget it; put it out of mind. The effect of repression is to prevent the complex exerting its normal action upon the flow of consciousness, that is to say, the complex can no longer cause its constituent ideas to emerge without resistance and it can no longer cause the flow of thought and action to proceed in the direction of its own conative trend.

Repression means that a certain resistance is opposed to the complex which prevents it affecting consciousness in a normal way. This resistance is called, by Freud, “censure.” In spite of resistance and the censure the complex preserves its autonomous existence and continues to influence the flow of phenomenal consciousness, but the influence is distorted and indirect. The character of distortion is dependent on many factors, the intensity of the complex, the degree of repression, the power of censure, and the unknown forces, termed constitutional predisposition. Under certain circumstances the resistance offered may be sufficient to produce complete dissociation, or splitting of consciousness—then we have Hysteria, the most pronounced of the psychoneuroses. Studies are found in Janet—“Mental States of Hystericals,” Janet's “Major Symptoms of Hysteria.”

The repressions, through the persistence of censure, prevent the complexes coming into a field of consciousness, but not infrequently the complexes are distorted, their real significance being kept from the personality. When they do appear in consciousness they may have a symbolie relation to the content of repressed complex noticed in sex complexes which are apt to be symbolized because repressed by education and conventions of society. The keeping of dogs, pets, etc., by elderly people without children is a more or less normal symbolism of a repressed complex.

Again, repressed complexes may in consciousness display directly opposite ideas; may be normal. As I know a physician, altruistic tendencies, religious tendencies, wanted to be a minister as a youth—now just opposite, condemns the church and is anti-social. He has a sex cast to his complex.

Abnormal prudery is a phase of this form of complex. Any intense prejudice in any individual should lead us to suspect a repressed complex. Obsessions are examples of a repressed complex, especially that type of obsession which haunts an individual in spite of all endeavor to get rid of it is evidence of repressed complex. The most striking example of this type I have had in my experience was a physician's wife. The obsession was just the opposite to the normal desires in conduct. It was characterized by symbolic form of constant washing of the hands.

fear of dirt, of contagion, etc. It is the small voice of conscience reproving the individual for past errors in conduct.

Dreams are part of symbolic evidence of the existence of a repressed complex. Freud says they are expressions of a wish fulfillment, which during the waking state are censured and repressed, but when sleep comes inhibitory control is lost, the censure is relieved and the complex figures in the dreams. The dreams may be allegorical—there is a condensation of past experiences, fragments being woven into the dreams in great variety but with a general sameness to all dreams when analyzed. These fragments when interwoven are known as constellations.

In the integrating process it is to be noted that there may be opposing or incompatible trends in the formation of a complex and beautifully brought out in dream analysis. One of the trends is in conflict with the other, the resultant is shown in the obsessions, the fears, prejudices, somnambulism, abulias, anesthesias, palsies, etc., or even an anxiety psychosis.

These conflicts produce the psychoneuroses, the hysteria, the psychasthenia and the varied obsessions, fears, doubts; character leaks, as shown in ties, mannerisms, eccentricities, etc. It is only by psychoanalysis that we determine the significance of the acts, the conduct, as shown in episodes, explosions, fuges, somnambulistic states, etc.

To successfully carry to fruition the psychoanalysis, which by the way is also the treatment inasmuch as it removes and explains the cause, the following technic is necessary:

First, it is necessary to secure the confidence of the patient by an explanation of what you desire to accomplish and the method you propose to follow. It is absolutely necessary to the success of the treatment, there must be personal confidence and intimacy between physician and patient. My experience of over twenty-three years bed-side work has taught me that there is no royal road to this confidence. Each case is to be studied on its own merits and approached in a way which experience alone can at the time dictate and justify.

Psychoanalysis is a retracing of the steps back to the events which conspired to produce the complex. Freud's assumption is that the actual consciousness of the present moment is rigidly determined by the affective or emotional past. The retracing, then, is for the purpose of discovering the event or events, making up the psychic trauma, fundamentally responsible for this emotional shock. It is found that around this central event, or events, are gathered or centered the complex—the mental constituents of which must be separated, its mechanism as affecting conduct explained and the confidence of the patient in himself, his environment, etc., restored.

Freud has found, as is natural to expect, that the complexes which are most frequent and conspicuous are sexual in character. In using the word sexual it is used in its broadest application and does not necessarily mean immoral. The intense conflict here is to be expected, because here are found powerful opposing trends. One, the powerful repression of all sexual thoughts, etc., the result of education and the conditions which society imposes; the other, the innate powerful physiologic laws and instincts, second in instincts and importance only to the great instinct of self preservation.

The conflict is founded upon experience which in the complex may be only a remnant of the past—as in hysteria, which, according to Freud, is made up of reminiscences of the past. The incompatibility of the normal self and normal longings, with unpleasant experiences or psychic trauma, results in repressions founded on experiences, which experiences may be only wishes, incompatible with social usages or customs, or may be tragic trauma, as insults to the person—the wishes or experiences are buried, repressed and perhaps forgotten, but not in the subconscious memories. The rise in the conflicts in dream states, in hysteria, etc., to give evidence that they exist as a formidable complex, which disturbs the conduct of the patient.

In our clinical work here we deal with the psychology of the individual, both in the sane and the insane. It is the talking it out process—"Just tell all." At first we proceed with slowness. It takes time to recall all of the events. The

enigma is to explain these events. It can only be done by seances of a few minutes to an hour a day. The number of seances to be determined by the time it takes to reach the bottom of the complex or association of events, ideas, etc. We unlock the door of memory; enter citadels long since closed; revive memories long since buried and by this process we reveal and explain the past. To tap the past memories we use the Jung Association Methods of study, examples of which I herewith present.

Dr. Norbury then briefly reported cases, using the graphic method to show time reaction to stimulus words, etc.

DISCUSSION

Dr. R. J. Burns: I have been most interested in Dr. Norbury's very excellent paper, particularly in the stimulus word method of working out the etiologic factors in this class of cases.

He dwells on the importance of treating these cases as confidential that their malady may not be viewed in the wrong light by their friends and relatives. As to the therapeutic measures: I would like to ask the doctor if he explains frankly to the patient the cause of his trouble and with a mutual understanding then starts out to correct the wrong impression in the patient.

Dr. Clark agreed with Dr. Norbury in his stricture against the too zealous surgeon, who was prone to operate before making a pathologic diagnosis. He remembered one or two such instances in his own practice where other methods than surgical, would have given the patient fully as much benefit and not have given him material upon which to build a "symptom complex" which in this particular instance was not enviable for the operator. He would therefore be very wary of offering surgical interference in those of known nervous instability, without first being doubly sure of conditions and likely results.

SOME OBSERVATIONS RELATIVE TO THE LACHRYMAL SAC

(Abstract)

J. SHELDON CLARK, M.D.

The subject of blennorrhoea of the nasal duct, with accompanying inflammation of the lachrymal sac, is one which should be more thought of by the medical profession. Time was when all we thought of doing for the alleviation of those suffering from this distressing and disfiguring affliction, were measures of more or less temporization. Probings, injections, wearing of styles—all are of very questionable benefit.

Chronic dacryocystitis is a very dangerous affair for an individual to carry about with him. Fuchs, in his text-book, says that acute dacryocystitis causes fully one-third of all the cases of *ulcus serpens* and this disease of the cornea we know to be most disastrous to that structure. Among the various causes of this condition, aside from injuries, are infections, either ascending from the nasal chamber, or descending from the conjunctival sac. The infecting organisms are many and various. One condition exists more frequently than many suppose, and that is tuberculosis. Bribak, working in the clinic of Prof. Axenfeld, in the University of Freiburg, reports on the material of the clinic there. He states that during the past few years twenty-five cases of tuberculosis of the tear sac had been found, although only a part of the extirpated tear sacs were examined microscopically.

The technic followed is that of Meller. Either local or general anesthesia may be used, although a local anesthesia produced with cocaine and adrenalin is preferred.

By keeping up a systematic dissection of the tissues, remembering that it is first skin, superficial fascia, orbicularis muscle, deep fascia and then the sac, and being sure that these various layers are gone through, not at one fell swoop, but by careful dissection; then one will not be in that "great slough of despond" for it veritably is like looking for "the needle in the hay-stack" when once one's relations and anatomical bearings have been lost or done away! Therefore the thought is for a clean dissection, rather than a cut, stab, twist and get-out procedure that ends in having a lachrymal fistula. There is one little point in the technic

that I learned from my friend Dr. Beard, and that is the loosening of the sac from its bed. After the incision through the deep fascia, one comes down to the sac. This structure is recognized by its color, and in most cases it resembles a vein, having a bluish cast and a rather shiny surface. The anterior crest of the lachrymal bone is located by the sense of touch and the small scissors begin the dissection, hugging the bone the while. After getting up to the vault of the sac, and having incised the ligament of the internal canthus, I have found it very satisfactory to continue the enucleation by using a small tenotomy hook. By careful manipulation the hook can be made to follow about the sac to the inner side and there is less liability of injuring the orbital fascia by this procedure. One experience of having the orbital fat come oozing into the wound, especially if that wound be infected, is enough to make one wary of transgressing into this structure.

Gentle curettment of the lachrymal duct is made and the wound closed with three or four silk sutures. Before closure of the wound, make sure that the sac is thoroughly removed, for remnants of the sac remaining speak for bothersome fistula afterward.

With the duct closed off through the nose one may ask concerning the disposal of the tears. Nature seems to take care of this question. There seems to be a diminution in the amount of tears secreted. In persistent epiphora it is recommended to remove a portion of the lachrymal gland, at least the lower lobe. This I have not found necessary in my series of cases. Likewise the resultant scar is very small if care is taken in adjusting the edges and small needles are used.

TREATMENT OF POST-ABORTUM INFECTION

(Abstract)

K. F. SNYDER, M.D.

All infections following direct instrumental interruption of pregnancy are extremely serious, due to the fact that as a rule it means injury to the uterus itself, and the fact also that these injuries also are done by incompetent, inexperienced or criminal hands. So that most of these cases when they become seriously sick are sick rather owing to the mechanical injury to the uterus with the following sepsis than to the infection of the contents of the uterus. The treatment followed in these cases, which is here suggested and which is the object of this paper, is based upon the successful outcome of five consecutive cases, where upon operation it was found that the uterus itself was damaged and the illness was not due to the absorption of toxin from an infected ovum.

As an interesting type of these cases the following case is cited in which a woman had endeavored to produce an abortion upon herself by the introduction of a slippery-elm twig, with which she succeeded in perforating her uterus at six week's pregnancy.

Upon operation the cul-de-sac was opened as well as the abdomen. The perforation was found in the posterior wall of the uterus and a perforation also of the sigmoid was discovered, upon both sides of which was found a localized abscess with considerable peritonitis surrounding.

Abundant drainage was inserted through the cul-de-sac as well as through the perforation of the uterus and also the abdominal wall and, remarkable to state, though this fact was not known at the time, the pregnancy was not interrupted, the woman was delivered in seven and one-half months of a child at term without any incident.

As will be seen from the illustration just given, the technic consists in the wide opening of the cul-de-sac as well as opening the abdomen, bringing the two drainage areas through the cul-de-sac and the abdomen together, and any perforation is also carefully drained. If it is but a partial perforation the area is opened up so that the drainage may be inserted through the os into the vagina.

Four other somewhat similar cases have been operated upon according to this technic with a mortality of none, and this procedure is advocated in all those cases which come to the surgeon's hand without a clear history as to the mode

of the abortion, provided the woman is seriously sick. It is not considered sufficient to merely open the cul-de-sac for in a number of cases operated upon the cul-de-sac was opened and nothing particularly suggestive was found whereas upon opening the abdomen a perforation was found with infection of the peritoneum being walled off from the cul-de-sac.

In view of the innocuousness of the ordinary laparotomy nothing is lost to the patient by this procedure and great gain to be gathered in care of drainage to the uterus. The plan, of course, is not intended for those cases where we may be sure that our trouble comes from the uterine contents alone, due to the absorption of the infected contents thereof.

DISCUSSION

Dr. Cuthbert J. Leavy: I have enjoyed Dr. Snyder's paper on post-abortion infection very much, but in order to carry out the true spirit of a surgical discussion, I must find some fault. I fear that to follow out Dr. Snyder's procedure, would be far too radical. We are all familiar with the striking and evidently dangerous picture presented in these cases, with pulse 150, temperature 105, perhaps; but we also know how rapidly the symptoms clear, in the great majority of cases, after a curement with proper irrigation and iodoform strip, or at most a vaginal puncture in the posterior cul-de-sac.

I say then—carry out this simpler procedure first and then, if symptoms do not clear in twenty-four hours, do an abdominal section.

NYSTAGMUS

(Abstract)

WM. J. RIDEOUT, M.D.

Following a description of the various forms of nystagmus in different diseases and physiologic nystagmus as elicited by various tests, Dr. Rideout in this paper dwelt particularly upon this symptom in connection with labyrinthine diseases. As a differential point between labyrinthine and cerebellar affections he stated that in labyrinthine affections the nystagmic movements were always directed to the sound or unaffected side, while in cerebellar affections they were directed to the same side as the disease. Among the tests used in the diagnosis of labyrinthine infection he prefers the caloric, with the temperature of the solution used above that of the body, which elicits a physiologic nystagmus with movements directed to the same side as the labyrinth which is being tested. Patients with a unilateral labyrinthine affection, with vertigo and associated nystagmus directed to the opposite side from the affected labyrinth, if the labyrinth is but slightly affected will have (where the above mentioned caloric test is used) counter movements toward the same side, but no counter movements if the labyrinth is affected so seriously as to be out of commission for this test, the direction of movements remaining the same as before. As this is a more common route of middle ear and mastoid affections reaching the brain than has hitherto been supposed, he urges early operative interference and drainage through the mastoid route as soon as diagnosis of labyrinthine infection can with any degree of certainty be made.

Dr. Clark said that he thought it well in thinking of nystagmus to remember that all movements of the eyes are not truly nystagmic in character. He spoke of searching movements of the eyes, such as occur in blind eyes, either in the congenitally blind or in acquired cases. Also those with chorioidal lesions in the region of the macula lutea.

Then the condition of pseudonystagmus, occurring perhaps most often in nervous diseases, such as multiple sclerosis, hereditary ataxia, and even in health.

Regarding the caloric tests. It was the doctor's opinion that these should not be made without due caution, especially in suppurative otitis media. He had observed an untoward result in one such instance, while using bichlorid solution, and with scarcely no elevation of the irrigation can, there followed a marked reaction in a patient who was convalescing from an acute mastoiditis with infection of the lateral sinus. Convulsions, nystagmus, vomiting, rise of temperature, loss of consciousness and other symptoms indicative of labyrinthitis occurred,

which in the doctor's opinion were caused by a too great desire to flood the operative field with the solution.

VERMILION COUNTY

About sixty members of the Vermilion County Medical Society held their regular meeting in the parlors of the Commercial Club at Hoopston, Ill., November 11. After the professional meeting the members were invited to the home of Dr. Russel where they partook of refreshments. The meeting at the club rooms was called to order at 8 o'clock. Dr. O. H. Crist of Danville read a paper on "Hydatid Mole," and Dr. Fred C. Dickson of Danville read a paper on "The History and Modern Treatment of Syphilis," both of which were of great value to the profession.

Among those present were: Drs. J. H. Honan, Bad-Nauheim, Germany. R. L. Hatfield, George Steely, J. G. Fisher, Benjamin Gleason, E. E. Clark, Solomon Jones, Henry F. Becker, J. Milton Guy, E. W. Fuller, A. E. Dale, O. H. Crist, T. E. Walton, Fred C. Dickson, J. W. O'Haver, Robert Clements, J. H. M. Clinch, Stephen C. Glidden, C. E. Wilkerson, H. F. Hooker, S. Merrill Miller, Theodore Regan, F. A. Baumgart, and E. B. Cooley, all of Danville. A. J. Leitzbach, Fairmount; F. N. Cloyd, Westville; E. Randall, Ambia; A. O. Sistler, Wellington; C. E. Brown, Rossville; W. S. Cossairt, Potomac; J. H. McIntosh, Collison.

WABASH COUNTY.

The annual meeting of the Wabash County Medical Association, was held in the Schneck Hall, Tuesday afternoon, October 22, at Mt. Carmel, Ill. The following officers were elected for the ensuing year: president, Dr. P. G. Manley; vice-president, Dr. J. J. McIntosh, Allendale; secretary, Dr. E. R. Lescher; treasurer, Dr. J. B. Maxwell; censor, Dr. W. H. Roberson.

Dr. Bleeker J. Knapp, of Evansville, presented a paper on "Traehoma" which was well received by all the physicians in attendance.

Other physicians in attendance from a distance besides Dr. Knapp were Dr. Dyer, of Evansville, and Dr. Sibley of Carmi. Dr. Wiggins of East St. Louis was unable to be present on account of illness.

At the close of the meeting the visiting physicians were shown about the city by Dr. Schneck in his auto.

WARREN COUNTY

The semi-annual meeting of the Warren County Medical Society, was held at the Science Hall of Monmouth College, Monmouth, Friday afternoon, Nov. 3, 1912. Although the weather was unfavorable, there were physicians present from four counties, which shows the loyalty of down-state physicians, to the county organizations. The meeting was called to order at 1:30, by the president, Dr. W. H. Wells, and after a brief business session, the first essayist on the program, Dr. W. M. Crosier, of Alexis, was introduced. Dr. Crosier read an instructive paper on "Headache." Dr. Crosier showed the inadvisability of attempting a cure, without first finding the underlying cause. The various headaches were considered, both as to cause, and the management subsequently. The subject was handled in an intelligent manner, showing that this subject, although a common one, has not received the attention which it often deserves.

This paper was discussed by Drs. Matheny, Bower and McClanahan of Galesburg, and Dr. Chauncey Sherriek, of Monmouth.

Dr. Chas. A. Elliott, of Chicago, gave an illustrated talk on "A Demonstration of Radiographs, of the Gastrointestinal Tract, with a Discussion of Some Pathological and Physiological Conditions, Demonstrable by this Means." Dr. Elliott reviewed briefly the advancement of radiographic work. Until the past few years, on account of the length of exposure necessary to get a good picture, it was almost impossible to get a picture of the abdominal viscera, on account of the peristalsis of the intestines, which blurred the picture. With the present day apparatus, it is possible to take a snap shot, and by giving a meal of bismuth subcarbonate, and taking a picture at regular intervals, it is possible to get a fair idea of the intestinal tract, as to its anatomical, as well as functional condition.

Dr. Elliott, by means of the stereopticon, was able to show a large number of pictures of cases taken from his service at Wesley Hospital, Chicago. Among these pictures, there were shown cases of gastric dilatation, abnormalities of stomach, constrictions of intestines, malignant growths, and a number of other conditions, in which the x-ray is a valuable diagnostic aid.

Dr. Elliott said that the x-ray picture in these conditions should not be considered infallible, in itself, but should be considered along with the clinical findings, from other diagnostic means.

This paper was discussed freely by a number of physicians present and a number of questions were asked which Dr. Elliott answered at length. The discussion was led by Dr. A. G. Patton, of Monmouth.

Dr. Herbert M. Stowe, of Chicago, had consented to read a paper on "Normal, Spontaneous and Operative Delivery," but owing to the fact that he was unavoidably detained at the last moment, he was unable to give this talk.

After the discussion of the paper by Dr. Elliott the meeting was adjourned after a vote of thanks from the society was given to Dr. Elliott for consenting to take part in the program.

HAROLD M. CAMP, Secretary.

WAYNE COUNTY

The Wayne County Medical Society held its regular quarterly meeting at the Mansion Hotel, Fairfield, Ill., Thursday, Sept. 12, 1912. The meeting was called to order by the president, Dr. William Johnson. The minutes of the previous meeting were read and approved. During the business meeting which followed, the matter of reducing the number of society meetings from quarterly to annually or semi-annually was discussed. It was decided to continue the meetings as before for the present at least. The time for the next meeting was set for Nov. 7, 1912, instead of the regular time in December. It is to be hoped that the roads and the weather will be favorable, and that each member of the society will be able to be present. This meeting is the time for the election of officers for the ensuing year. A committee was appointed to prepare resolutions to be forwarded to Dr. Franklin R. Pitner, of Clay City, Ill., on or before Oct. 9, 1912, in honor of the one-hundredth anniversary of his birth. The program was as follows:

Dr. J. T. Blakely presented a paper on "Serum Therapy" which was very interesting and discussed by all present. Dr. B. E. Garrison read a very able and instructive paper on "Tuberculosis of the Joints," with a report on a case.

The members present were Drs. W. N. Johnson, J. P. Walters, C. O. Truscott, James T. Blakely, Ostella Blakely, E. E. Roberts, J. E. Dixon and B. E. Garrison. The meeting adjourned to meet at the same place Nov. 7, 1912.

WESTERN ILLINOIS DISTRICT MEDICAL SOCIETY

This society convened at Jacksonville, October 25, and was the annual gathering. The program given was interesting throughout. Clinics were held at Passavant hospital from 9:30 till noon under the direction of Drs. A. L. Adams, W. P. Duncan and Carl E. Black. The clinic at Our Savior's Hospital was conducted by Dr. J. W. Hairgrove. The afternoon's program was held in the medical library room at the Public Library with Dr. W. E. Shastid of Pittsfield presiding. Dr. F. A. Norris, of Jacksonville, spoke on "The Surgery of Dysmenorrhea," and Dr. C. E. Black on "Items of Interest to the Sixth Council District." Other instructive papers were: "The Serum Treatment with Special Reference to Tuberculin," by Dr. Melinda K. German of Quincy, and "Poliomyelitis with a Report of Four Cases Occurring in Adults," by Dr. Frank Norbury of Springfield.

The society took dinner at the Pacific Hotel and part of the business transacted was the choosing of Whitehall as the meeting place for next year.

The following were the officers chosen: president, Dr. H. W. Chapman, Whitehall; first vice-president, Dr. Melinda K. German, Quincy; second vice-president, Dr. L. J. Harvey, Griggsville; secretary and treasurer, Dr. W. P. Duncan, Jacksonville. Board of Censors for ensuing year: Dr. L. H. A. Nickerson, Quincy, Dr. E. L. Cronch, Jacksonville, and Dr. T. J. Pitner, Jacksonville.

NEWS OF THE STATE

NEWS ITEMS

—The Galesburg Hospital recently received \$25,000 in addition to its fund by the sale of the Calkins property.

—Dr. H. H. West, of Elgin, recently delivered an address on Health and Religion, at one of the churches in that city.

—Dr. Josephine Milligan addressed the students of the Jacksonville High School on "Women in Medicine and Nursing."

—An effort is being made to raise money for the Aurora Hospital. A campaign will soon be undertaken by a professional worker along this line.

—The first hospital in Iroquois County was opened last week at Milford. The building was erected by Dr. Junkin and contains sixteen rooms.

—A \$20,000 hospital is proposed for Woodstock; if built, the Franciscan sisters offered to take over the building and conduct it without charge.

—Dr. J. Wilbur Moreland, of Penfield, has sold his practice to Dr. Broadway, of Odin, Ill., and will leave in a short time for Chicago, where he will take a post-graduate course.

—Dr. Wm. P. Donovan, of Rantoul, Champaign County, was arrested November 18 on a charge of forgery in connection with a certain Mrs. Effie Wyatt, recently sentenced to Joliet Penitentiary.

—Prof. W. F. Mumberg, who traveled as a specialist and sold orthopedic appliances through central Illinois for several years past, has been arrested on statutory charges preferred by a crippled girl.

—A new home for advanced consumptives will be erected at Belmont and Fiftieth avenues, Chicago, by the Jewish Consumptive Relief Association. The building will cost in the neighborhood of \$75,000.

—The \$65,000 addition to the Brokaw Hospital, Bloomington, is nearly completed. All the latest ideas in hospital construction are embodied in this building, which will accommodate forty patients.

—The work of rebuilding the Burnham Hospital at Champaign is nearing completion. A second story has been added and the old parts remodeled, and the hospital can now accommodate sixty-five or more patients.

—The annual report of the Morris Hospital has been issued, and shows the total cost of the building to be \$30,447.75, with public subscriptions of \$12,240.10, which leaves a balance still due on the building of \$16,526.25.

—The Vermilion County Medical Society has arranged to issue a county bulletin after the style of many other county societies in Illinois. Dr. Solomon Jones, the secretary, will edit the bulletin, which will be continued for six months on trial.

—St. Mary's Hospital at Galesburg, Ill., announces that from \$60,000 to \$100,000 will be required to build a new addition to that structure, which will be four stories and basement, and can accommodate from eighty to one hundred patients.

—Dean W. T. Sumner of the Episcopal Cathedral, Chicago, states that the number of marriages performed by him has not been decreased by the fact that a medical certificate has been required according to his announcement made some months ago.

—Dr. B. F. Hamilton, of Roseville, Ill., celebrated the 75th anniversary of his birth, November 16, at the residence of his daughter in LaHarpe, Ill., where he received the congratulations of many of his old-time friends. At noon a sumptuous dinner was served.

—The Peoria City Medical Society held its meeting Monday, November 4, at the Mitchell Sanatorium. Dr. W. R. Allison addressed the meeting on "The Present Trend of Medicine" and Dr. A. J. Foerter on "Obesity and Its Cure." After the program a pumpkin pie and butter-milk lunch was served.

—Dr. George B. Young, Health Commissioner of Chicago, has been having a controversy with the Municipal Court over the enforcement of judgments in Health Department cases. The claim is made that representatives of the bailiff's office did not round up persons on whom large fines or sentences of imprisonment were imposed.

—Two interesting papers were read before a large and enthusiastic audience of the city's medics at the regular meeting of the Canton Physicians' Club, held Monday, November 4, in the Commercial Club Rooms, at Canton, Ill. Dr. E. S. Nelson read a most instructive paper on "The Necessity of Glasses," which was appreciated by all present. Dr. P. S. Scholes' discussion was along the line of a case review giving the details and progress of a rare case, which was very interesting.

—The thirty-first annual meeting of the Central Illinois Homeopathic Association was held in Bloomington, October 15. The officers for the coming year were elected. Peoria was chosen as the next meeting place. The meeting was followed by a banquet at which Dr. C. A. Frazee, of Springfield, responded to the toast "Moonshine." The elected officers are the following: Dr. C. A. Frazee, Springfield, president; Dr. J. S. Adsit, Hoopeston, vice-president; Dr. L. T. Rhodes, Lincoln secretary-treasurer.

—Nurses Wage War on Diploma Mills.—From the northern part of the State comes word of a movement among nurses to bring about better conditions for the trained nurse and to enforce the state laws. The organization demands: suitable age at which a young woman may enter a school for nurses; one year's work in a high school or an education equivalent to one year in high school; practical or theoretical educational course of three years and better living conditions and hours for students.

—Damn'd if he does and damn'd if he doesn't. Dr. G. H. Rohr, of Spokane, is said to have been sued for \$15,000 by a jeweler, Henry Goldblatt. Goldblatt let out a roar that Dr. Rohr told him he had a cancer of the stomach. Believing that recovery was impossible and wishing to leave his property in cash the jeweler states that he sold his jewelry busi-

ness at a sacrifice of \$15,000, and waited round for death to claim him. Getting impatient he consulted eastern specialists and was told he was perfectly well.

—Dr. A. H. Waterman, Chicago, has taken to heart the oft-repeated warning of the Health Department about unventilated street cars. Dr. Waterman says that the air in a car he was on had lost all usefulness as a breathing medium. He insisted on standing on the platform and was threatened by the conductor with sundry penalties for so doing. The doctor is reported as follows: "I do not believe that a man should be compelled to enter a place where his life is in danger. The air in that car was foul and death-dealing. As soon as the street car company begins to close the windows in the cars the business of the physician begins to boom."

—The Danville Physicians Club met October 2, in their rooms on the third floor of the Temple Building. The meeting was a social affair, several reports of interesting cases being read by the various members of the club. A luncheon was one of the very enjoyable features of the evening. There was a good attendance and considerable interest was taken in the affair. The Physicians Club meets twice monthly, the first meeting of the month being social and the second meeting being scientific, with a discussion of current literature. The club seems to have been rejuvenated since the summer vacation and there will be a number of very interesting meetings during the coming fall and winter.

PERSONAL

Dr. H. Atlee Beam will locate at Moline, Ill.

Dr. L. R. Green, of Peoria, has gone west for the benefit of his health.

Dr. D. D. Goldberg has returned to Maryville and resumed his practice.

Dr. R. L. Eldridge, of Arrowsmith, has removed to Braidwood, Will County, Ill.

Dr. T. C. Murphy, of Hopedale, Ill., will spend the winter in Mississippi.

Dr. O. M. Rhodes sailed for Vienna, October 1, where he will spend a year in postgraduate work.

Dr. R. J. Stiver, of Lena, has sold his practice to Dr. C. P. Leitzel, of Dakota, and will locate elsewhere.

Dr. E. H. Hanssler, of Peoria, has been granted permits for the erection of three houses; he has already built several houses.

Dr. M. B. Titterington, of Jerseyville, has removed to St. Louis, Mo., where he will serve as an x-ray specialist in the office of Dr. R. D. Carmon.

The engagement has been announced of Dr. Seely Wood, of Ogelsby, to Miss Mona Gladfelter, of Ottawa, Ill. The wedding will take place in the spring.

Dr. C. H. Merritt and wife, Dr. Nina Polson Merritt, have returned to Alton to live and practice, after a stay of fifteen months at Eagle, Alaska.

Dr. L. C. McKinney, of New Douglas, has sold out to Dr. J. W. Edwards, and after a short post-graduate course in St. Louis, will locate permanently in Florida.

Dr. W. B. Wakefield, formerly of Heyworth, having finished his studies abroad, has returned and will locate in Peoria, where he will limit his practice to dermatology.

Dr. George M. Peairs, for nineteen years physician at the Illinois Steel Company at Joliet, has resigned, and Dr. W. B. Hughie has been appointed his successor.

Dr. H. M. Dally, of Pontiac, formerly of Kempton, is seriously ill at the Presbyterian Hospital, Chicago, where he will undergo an operation for some internal trouble.

Dr. Will Turnbull, formerly of Monmouth, Ill., a graduate of the University of Pennsylvania in 1906, has been elected medical director of the Pennsylvania Tuberculosis Sanitarium, located at Cresson, Pa.

Dr. Ralph D. Fox, of Bloomington, after spending six months in Harvard in post-graduate work, sailed for Vienna to continue his studies in eye, ear, nose and throat for six months, when he will return to Bloomington to resume his practice.

INJURIES TO DOCTORS

—Dr. E. J. Higgins, of Joliet, sustained a fracture of the wrist while cranking his automobile.

—Dr. Clara Edmands Holmberg, of Springfield, Ill., is suffering with a large gash under her left eye, as the result of a runaway accident.

—Dr. W. W. Lewis, of Tennessee, was brought to the Marietta Phelps Hospital, Macomb, Ill., suffering with a broken leg, the result of a runaway.

—Dr. J. F. Blackwelder, of Litchfield, was seriously injured in a runaway while making a call. His horse became frightened at an approaching car, overturned the buggy and threw the Doctor out.

—Dr. W. D. Humphrey, of Virginia, was seriously injured, October 28, as the result of a runaway. He received a severe fracture of the skull, and was taken to Passavant Hospital, Jacksonville, for treatment.

—Dr. A. C. James, of Springfield, narrowly escaped being killed on November 15, when a buggy he was driving was struck by a Wabash train. He sustained a gash across the top of his head, and his entire body was severely bruised.

—For the fifth time during a long practice, Dr. W. H. Enos, of Alton, was tipped out of his buggy. On the night of November 15, while on the way to see a patient the buggy slid down an embankment and threw him out, but fortunately he was uninjured, save for a few bruises.

REMOVALS

Dr. A. A. McBrien has removed from Hillsboro to East St. Louis.
Dr. Edward F. Fischer, of Benld, has removed to Upper Alton, Ill.

Dr. Henry Hohn has removed from Waukegan to Ishpeming, Mich.
Dr. H. W. Hand has removed from Whitehall, Ill., to Ganado, Texas.
Dr. Ralph E. Kleckner has removed from Mattoon, Ill., to Lynchburg, O.

Dr. Fred E. Ewing has removed from Galesburg to Kenmore, North Dakota.

Dr. R. C. Schlueter has removed from 835 W. 63d Street, Chicago, to Unionville, Mo.

Dr. Karl K. Koessler announces the removal of his office to 104 South Michigan Avenue.

Dr. Wm. Bernhardt Fehring announces the removal of his office to 104 South Michigan Avenue.

Dr. Frank W. Lynch has moved his office from 32 North State Street to 104 South Michigan Avenue, Chicago.

Dr. Peter T. Diamond, of 2050 W. 12th Street, Chicago, has removed to 2754 Ewing Avenue, Evanston, Ill.

Dr. Fenton B. Turck has removed from 37 Cedar Street, Chicago, Ill., to 14 E. 53d Street, New York City.

Dr. W. K. Dyer has removed from Merritt to Watertown, where he has taken a position in the State Hospital.

NEW INCORPORATION

The Schroth System of Teaching, Chicago; capital \$2,500; instruction in science of mental, physical and medical healing. Incorporators, Anna Z. Kirwan, Emma S. Kurzenknabe, R. R. Bair.

PUBLIC HEALTH

—Dr. C. B. Johnson has been elected president of the Champaign County Anti-Tuberculosis Health League. Drs. Newcomb and Schowengerdt and Miss Frances North were appointed on the committee for locating a free dispensary in the twin cities. It will require \$2,000 to wage a successful fight against the disease during the next year.

—The Christian County Medical Society has arranged for a public health meeting to be held in connection with the Thanksgiving teacher's institute. Dr. George T. Palmer, of Springfield, Ill., will deliver an address on "Tuberculosis," and Dr. E. W. Fiegenbaum, of Edwardsville, will give an address on "A Plea for the Youthful Victim of the Social Evil."

—Three prominent physicians of Peru took part in the National Society for the Prevention of Tuberculosis meeting, held in the Congregational Church at Peru, Sunday, November 3. The following phases of the subject were presented: "What is Tuberculosis and How is it Acquired?" Dr. O. C. Yoder. "How to Prevent Tuberculosis," Dr. J. B. Nauman. "How to Live with Tuberculosis," Dr. A. H. Hattan.

—The United States Department of Agriculture, under date of October 17-24, has issued fifty notices of judgment numbering from 1700 to 1749. They contain the usual proportion of fake food products. Kneipp Malt Coffee is said to contain no coffee at all. There were seven catsups and five mixtures of tomato pulp condemned, and a number of egg preparations "consisting in whole or in part of a filthy, decomposed and putrid animal, to-wit, egg substance, that is to say, bacteria, gas-producing organisms, parts of embryos and mold." Misbranding was alleged of the Make Man Tablets, a preparation prepared only by the Make Man Tablet Co., Chicago, "guaranteed to build up the system and restore lost vitality: a health food for the nerves." On examination by the Board of Chemistry of the Department, it was found to be a white, sugar coated tablet, consisting essentially of iron carbonate, Blaud's mixture, arsenic, strychnin, aloes and hop extract. Misbranding was alleged in the information for the reason that each package containing the product bore the statement that the article contained no poison, which statement was false and misleading for the reason that the product contained certain poisons, strychnin and arsenic. On March 25, the defendant entered a plea of *nolo contendere* to the information and the court imposed a fine of \$5.

MARRIAGES

L. L. YERKES, M.D., of Alton, was married to Miss Cora Wright, of Alton, on October 16, at Edwardsville.

H. N. CHILD, M.D., of the medical staff of the Kankakee State Hospital, to Miss Mildred Unclebee, of Springfield, Ill., October 30.

CHESTER ORVILLE SHEPARD, M.D., Winnebago, Ill., to Miss Adelaide Louise Hobbs of Chicago, October 28.

ARTHUR FREDERIC BEIFELD, M.D., Chicago, to Miss Ellen Abbott, of Marshalltown, Ia., November 12.

JOHN VOSBURG STEVENS, M.D., Chicago, to Miss Isabelle Strawser, of Janesville, Wis., October 31.

NARCUS SOLOMON OLIVER, M.D., Chicago, to Miss Nan Schwyn, of Grand Island, Neb., recently.

CLARENCE W. TAYLOR, M.D., of Bethany, to Miss Freda Monroe, of Sullivan, Ill., November 19.

H. J. FREIN, M.D., of Centralia, Ill., to Miss Susan Poirot, of Belleville, November 20.

DEATHS

PETER EPPLER, M.D., of Pontiac, died November 3, 1912, after an illness of several years, aged 72.

G. A. JAMES, M.D., a Civil War veteran, died at his home in Carthage, Ill., October 21, 1912, aged 80.

WILLIAM H. MILLER, M.D., formerly of Clayton, Ill., died suddenly at his residence in Omaha, Neb., recently.

EDWARD M. MAY, M.D., died at the family residence at Mt. Zion, November 2, of uremic poisoning, aged 44.

J. C. YOUNG, M.D., of Roanoke, Ill., died November 10, at Arizona, where he had gone for the benefit of his health two years ago; aged 42.

J. T. MILLER, M.D., one of the pioneer physicians of Champaign County, died at the home of his son in Canton, O., November 11, 1912; aged 82.

FREDERICK WERNER, M.D., Northwestern University, Chicago, 1904; instructor in operative obstetrics in his alma mater; died at his home in Chicago, October 23; aged 31.

HIRAM H. BALDWIN, formerly of Lake City, Ill., where he practiced medicine and was postmaster from '85 to '89; died at Clare, Ia., where he had lived for the last twenty-three years.

JOSEPH C. PICKARD, M.D., Rush Medical College, 1887; formerly a member of the American Medical Association; died at his home in Chicago, October 31, from cerebral hemorrhage; aged 71.

WILLIAM M. MILLEN, M.D., College of Physicians and Surgeons, Keokuk, Ia., 1882; formerly principal of the Monmouth, Ill., high school, died at his home in Omaha, October 22, from heart disease; aged 65.

WILLIAM A. EDWARDS, M.D., died at his home in New Douglas, October 21, aged about 45. Dr. Edwards practiced at Butler for a number of years and two years ago moved to Walshville, and two weeks ago to New Douglas.

B. O. BEAM, M.D., of Moline, was burned to death in a barn at Joslyn, Ill., November 14. While out hunting with a party of men he decided to sleep in the barn. During the night the barn caught fire and was destroyed. The body was found in the ruins.

ENGELBRECHT NELSON, M.D., College of Physicians and Surgeons, Chicago, 1901; a member of the American Medical Association; of South Chicago, died in the South Chicago Hospital, October 15, from carcinoma of the liver and mediastinum; aged 46.

Book Notices

MAKING GOOD ON PRIVATE DUTY, PRACTICAL HINTS TO GRADUATE NURSES. By Harriet Camp Lounsberry, R.N. J. B. Lippincott Co., Publishers, Philadelphia and London. Price \$1.00.

Miss Lounsberry, although located in the smaller cities in the country, is evidently imbued with high ideals of the profession of nursing. Besides practical advice there are a number of excellent recipes and hints regarding the nurse herself and her patient, which should be placed in the hands of every nurse. We recommend the book to all readers.

INTERNAL MEDICINE. By David Bovaird, Jr., A.B., M.D., Assistant Professor of Clinical Medicine in the College of Physicians and Surgeons of Columbia University, in the City of New York. With 109 illustrations in the text and seven colored plates. J. B. Lippincott Co., Philadelphia and London. Price \$5 00.

This volume of more than 600 pages is strikingly up to date, having been put on the press in August, 1912. In his preface Dr. Bovaird says: The title has been chosen in recognition of the need of a term which shall denote those subjects

left of the older "practice of medicine" when all the specialties have been subtracted from it, those subjects which are, after all, the fundamentals of our study.

The arrangement of the subjects has been dictated by the wish to put the simpler first, and to present something of a logical order of study. The placing of some subjects, such as that of small-pox, among diseases due to animal parasites, is questionable, but in such instances it has seemed well to follow the best leading we have at present, although we may be uncertain of its correctness. The final classification of many of the familiar diseases must long remain doubtful. Syphilis has for years been regarded as surely a bacterial disease and classified accordingly. The recent studies apparently prove the specific organism to belong to the lower orders of the animal kingdom. At any time further investigation may restore the disease to its older position. In like manner the specific agents of scarlet fever, measles and other exanthemata are assumed to be bacteria, and these diseases are placed accordingly. The eager investigations now going on in so many laboratories may any day give one or more of these diseases a new position. We must act on our present knowledge, with full consciousness that much of it may to-morrow require revision.

The lack of illustration in the current works on our subject has been very striking in this day when photography is so readily available and is so great an aid in the presentation of any subject.

A review of the work will show that it is extremely well illustrated, contains scarcely a superfluous word and is exactly up to date in every particular. An appendix is devoted to the general care of the sick and standard diets which will be of great value to the busy practitioner, to whom we can recommend the work with the utmost confidence of its great value.

A METHOD OF MEASURING THE DEVELOPMENT OF THE INTELLIGENCE OF YOUNG CHILDREN. By Alfred Binet and Th. Simon. Authorized translation, with Preface and an Appendix, containing an arrangement of the tests in Age and diagnostic groups for convenience in conducting examinations, by Clara Harrison Town, Ph.D., Director of the Department of Clinical Psychology, Lincoln State School and Colony, Lincoln, Illinois. Author of *Two Experimental Studies of the Insane*. Price, \$1.00. The Courier Company, Lincoln, Illinois.

The growth of interest in the mentally defective child; the so-called under-average, or backward child, is an index of the recognition of the child as an individual. A sentiment, a duty, a need which the educator, the psychologist and the physician now recognize is a part of their service to the child as an individual and to society as an organized body of individuals. True it is that "Psychology deals with the individual and sociology deals with the group," but that separate domains exist for each is not tenable. Hence, what concerns the individual, likewise concerns the group as a whole. Nothing is of more importance in the consideration of social problems than the mental life of the child; its adaptations to social environment and its incorporation in social associations and organization. The mentally defective child must be recognized, provided for and developed to his full educational possibilities. In order to give this now recognized duty its full possibilities, a system of recognition for the purpose of diagnosis, study and forecast of each individual case has been needed. The public school teacher has for years known of this need, but it is only within the past few years that any reliable, worthwhile system has been evolved by the aid of which this diagnosis could be made and the educational needs of the individual child prescribed.

The system evolved by Binet and Simon, of France, has attracted world wide attention, as the most practical, natural and philosophical system of measuring the intelligence and estimating the mental level of children. This work is presented under "A Method of Measuring the Development of the Intelligence of Young Children," by Alfred Binet and Th. Simon; translated by Clara Harrison Town, Ph.D., Psychologist, Lincoln State School and Colony, Lincoln, Illinois. Published by the Courier Co., Lincoln, Illinois.

The booklet "is a brief but complete statement of the Binet-Simon Method." The tests, as finally revised by the authors, are adequate in their presentation to

give a convenient working manual of the method. The translator says "that just such a manual is needed in the United States at the present time." Its need is to acquaint those interested (every physician should be interested), with accurate knowledge concerning the system. This is the first full translation in English of the Binet-Simon writings and should be in the hands of educators and physicians and all other persons having to deal with the problems of the underaverage or mentally defective children. It is applicable to children in the public schools; in fact, here is where its greatest usefulness is to be noted.

The tests are arranged according to mental age, based on the findings in selected groups from the average public school children, the ages ranging from three to fifteen. The scale was standardized by individual examinations comprising many thousands of school children. The method being to ask the child some precise questions and having him perform some simple experiments. These tests reveal the average mental attainments for the child at a given age as compared with the normal standard. Upon the findings of these tests is based the mental level of the child under examination.

The booklet gives the tests grouped according to age from three years up to fifteen years inclusive. The necessary instruction for each group tests and their significance follows. Then follows a description of the conditions necessary for a successful examination, and then an appendix, correlating this system, for use in the diagnostic study of the essentially feeble minded child.

In the application of these tests the translator's admonition should be kept in mind, viz.: "The surface simplicity of the method has encouraged many to attempt its application with little more knowledge concerning it than that supplied by the list of tests." The teacher and the physician will do well to familiarize themselves further with the contributory knowledge of educational psychology in order to value and appreciate the great need of this system of individual study of the child.

This is the day when the individual is coming to his own and no where is there a more pressing need for study of the individual than in the child, as found in the home, the school, or the Juvenile Court. The revelations of Dr. Healy in his work in the Juvenile Court in Chicago, and of Dr. Town in her study of the defective classes in the State Institutions, emphasizes the needs of the child being studied in the home and especially in the public school. The time is not far distant when the public schools of Illinois will either have an attached or visiting psychologist to meet the growing need of diagnosis and recommendations for educational treatment in the individual cases, even now the despair of the teacher in the graded work of the public schools. The physicians of Illinois have always shown their public spirit in serving as Directors to the public schools, and to be alive to this new field of valuable activity let them familiarize themselves with the Binet-Simon System, the best knowledge of which, in English, is obtainable in this booklet.

Dr. Town is to be congratulated in the even translation, clear diction and serviceable copy she has produced.

We trust that as Binet authorized the translation of this monograph there will be a demand for a second edition. Then, with this authority and the demand for the monograph there will be justification for its better typographical presentation.

F. P. NORRURY, M.D.

A MANUAL OF PERSONAL HYGIENE. Proper Living Upon a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, A.M., M.D. Assistant Surgeon to the Wills Eye Hospital, Philadelphia, etc. Fifth edition, revised and enlarged, 472 pages illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Price, \$1.50 net.

The continued popularity of this well-known and excellent manual is attested by the fact that a fifth edition has become necessary within the space of a decade. The additions that have been made include a chapter on body-posture; an illustrated system of home gymnastics; a chapter on domestic hygiene; an appendix describing the simpler methods of hydrotherapy, thermotherapy, and mechano-

therapy, and a section on first aid in medical and surgical accidents and emergencies. A brief glossary of some of the technical terms employed in the text and a convenient index complete the volume which in its improved form will, we are confident, surpass the success of its earlier editions.

NURSING IN DISEASES OF THE EYE, EAR, NOSE AND THROAT. By the Committee on Nurses of the Manhattan Eye, Ear and Throat Hospital. J. Edward Giles, M.D., Surgeon in Eye Department; Arthur B. Duel, M.D., Surgeon in Ear Department; Harmon Smith, M.D., Surgeon in Throat Department. Assisted by John R. Shannon, M.D., and John R. Page, M.D. With chapters by Herbert B. Wilcox, M.D., Attending Physician to the Hospital and Eugenia D. Ayers, Superintendent of Nurses. W. B. Saunders Company, Philadelphia and London, 1912.

The book is well edited and well written and certainly seems to fill a long felt want. The average nurse though well trained and competent in general medical and surgical nursing is often at a loss when called upon for assistance in specialties: both to her own embarrassment as well as the annoyance of the specialist. To her this little volume ought to prove a great help. It contains much that such a nurse ought to know. Furthermore the subject matter is so presented as to be readily understood and assimilated by those readers for whom it is intended. The illustrations ought to prove quite as helpful as the text.

DYSPEPSIA: ITS VARIETIES AND TREATMENT. By W. Soltau Fenwick, M.D. (Lond.), Doctor of Medicine of the University of Strassburg. Octavo of 485 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

Dr. Fenwick is such a well known writer on diseases and disorders of the digestive organs that the fact merely needs mention to give any work coming from him on these subjects a good standing. The subject of dyspepsia is a very important one, and a good book on it is ever welcome to the medical practitioner. The author tells us that he began this work more than sixteen years ago, and that he based his teaching on an experience of more than eighteen thousand cases of indigestion. One thousand typical cases, however, form the real ground work of the volume. The volume opens with a chapter on the varieties of dyspepsia. This is followed by the abnormalities of secretion. Then the author discusses the loss of muscular power. Inflammation of the stomach is next considered. The nervous disturbances are then considered. This is followed by dyspepsia from displacements. The author next discusses foreign bodies and living creatures in the stomach. There is a chapter on dyspepsia in infancy and old age. There is full attention given to dyspepsia due to disease of other organs. The book closes with a section on intestinal dyspepsia. Throughout the treatment is of the most practical character. The book is full of valuable suggestions.

TREATMENT OF THE DISEASES OF CHILDREN. By Charles Gilmore Kerley, M.D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital, etc. Octavo volume of 597 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

Dr. Kerley has supplied a practical book, planned and written for the practitioner's daily use. Modern methods of management and treatment are given in greater detail than has ever before been attempted; and in every case the therapeutic directions given are definite and complete, telling just what measures should be instituted, what drugs given, and in many cases valuable prescriptions are included. There is a large chapter devoted to therapeutic measures other than drugs, and an excellent illustrated chapter on Gymnastic Therapeutics, giving explicit directions for the correction of certain abnormalities in which gymnastics have proved efficacious. A large chapter on Drugs and Drug Dosage will be found extremely helpful to the practitioner.

PRINCIPLES OF PHARMACY. By Henry V. Army, Ph.G., Ph.D. Philadelphia and New York: W. B. Saunders Company, 1912.

This is a remarkably good book upon the subject, being very complete. It is divided into seven parts as follows: Pharmaceutical Operations, Galenical Pharmaceutical Preparations, Inorganic Chemistry, Organic Chemistry, Pharmaceutical Testing, The Prescription, Laboratory Exercises.

As the author says himself, the intention of this book is to explain the Pharmacopeia from a pharmaceutical standpoint. Although this work is evidently rather intended for students of pharmacy, yet it would form an excellent reference book for physicians and medical students, as a lack of knowledge of the elements of pharmacy is a common weakness in both these classes.

EPOCH-MAKING CONTRIBUTIONS TO MEDICINE, SURGERY, AND THE ALLIED SCIENCES. Being Reprints of Those Communications Which First Conveyed Epoch-Making Observations to the Scientific World, Together with Biographical Sketches of the Observers.—Collected by C. M. B. Camac, M.D., of New York City. Octavo of 435 pages, with Portraits. W. B. Saunders Company, 1912. Artistically Bound. \$4.00 net.

When we stop to consider what we owe to our forefathers in medicine, their discoveries and investigations, the fruits of which enable us to follow our profession intelligently to-day, we feel that we are greatly indebted to Dr. Camac in presenting us with such a readable and timely volume as the one before us. Among the reprints and subjects discussed we will mention Antisepsis, with autograph letter of Lord Lister, to whom this work is dedicated; Circulation of the Blood, with portrait of Harvey; Percussion of the Chest; Auscultation and the Stethoscope, with portrait and sketches of Laennec; Vaccination, with several articles by Jenner; Anesthesia, with portraits of Morton, Wells and Warren; finally, Puerperal Fever, article by O. W. Holmes and list of Semmelweis' writings, Holmes' article on Puerperal Fever antedating that of Semmelweis. This book is of great interest and it should be found in the library of every physician.

POCKET THERAPEUTICS AND DOSE-BOOK. By Morse Stewart, Jr., B.A., M.D. Fourth edition, rewritten. Small 32mo of 263 pages. Philadelphia and London: W. B. Saunders Company, 1912. Cloth. \$1.00 net.

This is an excellent little pocket manual. Every physician, no matter how much experience or learning he may have, will have use for just such a book. The experienced physician will keep it on his table for ready reference occasionally, and the beginner will find it convenient to carry in his pocket, especially in the country.

This dose table is very complete and accurate. The doses are given in grains, grams, and cubic centimeters, so that one may familiarize himself with the metric system. Doses of the different sera are given and of all the different official preparations. There is a complete table of solubility, and a table of poisons, and antidotes. Also condensed therapeutics in the form of an index of diseases and remedies.

PRESCRIPTION WRITING AND FORMULARY. By John M. Swan, M.D., Associate Professor of Clinical Medicine, Medico-Chirurgical College of Philadelphia. 32mo of 185 pages. Philadelphia and London: W. B. Saunders Company, 1912. Flexible leather. \$1.25 net.

This little book is quite useful both for the student of medicine and the general practitioner. The paragraph in the preface in which reference is made to therapeutic measures other than the employment of drugs ought particularly to be emphasized.

The part of the book devoted to prescription writing is all that could be desired. Especially good are the chapters on "Latin for Prescription Writing, Official Preparations of U. S. P., Dosage, and Incompatibility."

In the Formulary are to be found a great many very useful prescriptions. The number given for each disease, and the tendency to polypharmacy might offer ground for criticism in these days when so few drugs are used.

A TEXT-BOOK OF PATHOLOGY. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico Chirurgical College of Philadelphia. Second edition. Octavo of 856 pages, with 437 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$5.00 net; half morocco \$6.50 net.

The first edition of this work was well received by the profession, but the great advance in our knowledge of pathology during the past five or six years has called for a new edition. Examination shows a thorough revision by a competent author who has for many years been a teacher of pathology and bacteriology. While the work is worthy a place in any physician's library, it will be found of special value to students of medicine preparing for the degree of doctor of medicine. After an introduction on the scope and terms of pathology and the nosology and nosogeny of disease, the work is divided into two parts, the first on General Pathology, with eleven chapters, covering 375 pages, and the second on Special Pathology of ten chapters, 408 pages. Also an index of 52 pages. The work is well illustrated.

DISEASES OF THE EYE. A Hand-Book of Ophthalmic Practice for Students and Practitioners. By G. E. deSchweinitz, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania and Ophthalmic Surgeon to the University Hospital; Consulting Ophthalmic Surgeon to the Philadelphia Polyclinic; Ophthalmic Surgeon Philadelphia Hospital; Ophthalmologist to the Orthopedic Hospital and Infirmary for Nervous Diseases. With 351 illustrations and seven chromo-lithographic plates. Sixth edition, thoroughly revised. Sold by W. B. Saunders Company, Philadelphia and London, at \$5.00.

This issue has 889 pages, with index, and none wasted. The titles may quite as well have included his "Ex" connections with Jefferson, for nobody loves him less. All who have touched ophthalmology know of deSchweinitz and those who have not read after him should. We cannot put a book of this class before our readers in our space, but we cannot too highly commend it. The men who bought the earlier editions will seek this one, on account of the rewriting of ten leading articles. Paragraphs have been inserted in the articles for the first time touching on fifteen new and important methods and operations. A few new illustrations are noted. It begins with the elementary considerations and cautiously conducts the reader up to actual practice. There is no better book for the man who can afford but one.

A PRACTICAL STUDY OF MALARIA. By William H. Deaderick, M.D., Member American Society of Tropical Medicine; Fellow London Society of Tropical Medicine and Hygiene. Octavo of 402 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$4.50 net; half morocco, \$6.00 net.

This work of some 400 pages is devoted entirely to a comprehensive view of malaria, in all its phases, but is essentially practical and devoted to the needs of the general practitioner. It should be in the hands of all physicians who practice in malarial districts at least. The history and geographical distribution of the disease are first given in detail followed by a thorough discussion of the parasite and the rôle of the mosquito. The description of the parthogenetic cycle is of special interest as the only rational explanation of latency and relapse, and marking the first appearance of this explanation in the English language.

A LABORATORY HANDBOOK OF PHYSIOLOGIC CHEMISTRY AND URINE-EXAMINATION. By Charles G. L. Wolf, M.D., Instructor in Physiologic Chemistry, Cornell University Medical College, New York. 12mo volume of 190 pages, fully illustrated. Philadelphia and London: W. B. Saunders Co.; 1912. Cloth, \$1.25 net.

This work is arranged in such a manner as to make the subject matter very comprehensive to the average practitioner. It covers the field fully, and takes into consideration the clinical factors as well as simply chemical and microscopical tests. As a rule, text-books on physiological chemistry simply go into the abstract science of the subject, which is of very little use to the practitioner or student. The matter in this little book, however, has been arranged in such a manner as to make it a practical working manual for the student as well as the practitioner.



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